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THE SITUATION IN SOUTH AFRICA.

FURTHER PERSONAL OBSERVATIONS AND IMPRESSIONS;
BEING A CONTINUATION OF THE SPECIAL ADDRESS
OF APRIL, 1900, AND SUBSEQUENT DISCUSSION.

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Wednesday, 29th January, 1902.

General Sir EDWARD G. BULWER, K.C.B., Colonel, Royal Welch
Fusiliers, in the Chair.

I.—INTRODUCTION.

PRIVILEGED to witness two years ago the inauguration of the final effort to raise the siege of Ladysmith, and within a few days to see the positions held around the circle of Sterkstrom, and thence along the front of the armies in South Africa, to arrive just in time for the success of Paardeberg, I had the honour, on 9th April, 1900, of detailing to the Royal United Service Institution such "Personal Observations and Impressions" as I was able to gather. That address, though widely republished (June, 1900), and discussed by active participants in the campaign, was kindly received and leniently criticised. Indeed, but one exception was taken to any statement, and that in a debate upon the points raised among the officers of one of the ships of the Royal Navy, whose company and guns had rendered such noteworthy service to the land forces of the Empire.

The phrase in question was: "That the Boers had proved a marvellously brave and tenacious foe, unlimited in their ingenuity and utilisation of all the devices of war."

It is a statement to which I must respectfully adhere, and not the less because I have lately had the opportunity of treading in the path of the gallant assaults by the Boers upon Wagon Hill and Spion Kop, each most difficult in itself, and terrible in the face of the rain of lead in which they were made. In the graphic "Words by an Eye-Witness" (*Blackwood*):— "The Boer takes a lot of learning; we had not learnt him then (before Pieter's Hill), nor have we yet, nearly two years after tackling his elements. I think his courage, tenacity, and dull unpicturesque enthusiasm will never be fully mastered by our nation. We are not quick to grant our own attributes to others. . . . The Boers are brave men. In the name of fair-play let no one state otherwise." Indeed, it little behoves us, or any one of us, to write the Boers down less capable or courageous than they have been found in practice upon too many occasions. If they have frequently sullied the Flag of Truth by its abuse, their humanity to the wounded, save in some recent instances, on which it is not necessary to dwell, and their general kindness — perhaps excessive kindness on some grounds, to prisoners, may be weighed in the counterpoise. The Boer, rough and shaggy in exterior, with many of the defects of long isolation and battling with men, animals, and nature, apparent in his deep-sunken, keen, dissatisfied, unsympathetic grey eye, is wherewithal upon the whole a courteous, warm-hearted, hospitable, homely man of unflinching purpose.

But fresh from Ladysmith and close study of the positions of besiegers and besieged, I would fain do greater justice than I did from the outside, imbued perhaps with the problems arising in and around Kimberley, to the gallantry and obstinacy of the defence by Sir George White, of the cannon-girt and fever-stricken townlet lying at the mercy of close commanding heights.

With this defence and apology I pass to the circumstances of to-day, only expressing how great the loss to the armed science of the world is the recent death, at Warsaw, of M. Jean de Bloch. His Excellency took a deep interest in its modern developments. This was evidenced by his able lectures last summer at the Royal United Service Institution, as also in books and essays which will long be a monument of his far-seeing intelligence and perception.

The occupation of Bloemfontein, the advance on Pretoria, the submissions of the capitals of the enemy, and of the chief towns, the flight of Mynheer Paul Kruger, the transmission beyond the seas of nearly 20,000 prisoners, the surrenders of principal inhabitants in every direction, all justified the declarations of Lord Roberts in the autumn of 1900, that

the war was practically over, and the national welcome to himself and some early returning portions of his victorious army.

There had been, however, too much haste. An army sweeping through a country does not pacify it, if the entire nation has itself to be conquered. Too much dependence had been placed upon the permanency of submission to force of numbers. The benign character of the Commander-in-Chief was reflected in all his actions and all his orders. He spared where he could spare. He accepted paroles on his own high standard of national honour. He impressed "upon all officers who might at any time be in charge of columns or detached commands, the grave importance of doing all in their power by good and conciliatory treatment to secure the co-operation of the people of the country, in all matters affecting either their own interests or those of the troops."

Lord Roberts has only to reproach himself with too great tenderness and consideration. It is a fault the nation applauds. But close behind an army must come police and civil administration. The invader has passed on. He holds only his line of communications, and that not too strongly. No troops are seen. Two burghers meet, then three, then four, then a dozen. There is no police visit or remonstrance. The dozen form a band—"see we can act with impunity," and then occupied towns have had to be abandoned, the loyal and those who bade us welcome left to the small mercy of the enemy.

Unable or unwilling to protect our friends, we augmented the hostile ranks from their number. In more than one instance—the ancient capital of Potchefstroom to wit—this process of occupation and abandonment was repeated, until all doubted whether we were strong enough to safeguard our partisans, or were not playing still the shuffling game of the past century, which brought the British name into contempt and derision, cost 100,000 lives, and £300,000,000 of money, and loosened the Union Jack in South Africa. Perhaps it is as well that the sequel has taken the course it has. The Boers were in no sense conquered by the seizure of their capitals. A pretended surrender would have sent all our armies home rejoicing. The short-sighted would have given them power for fresh offence, and in a few years there would be a repetition of the war. "The gain outweighs the loss, I unfeignedly wish that the war with all its sorrows and suspense might end. But it remains true, sad though the argument is, that the more completely the Boer exhausts himself now, the more convinced and the more final will his submission necessarily be." This is the opinion of Captain Mahan, the ablest Anglo-Saxon writer on naval and military matters. It is undoubtedly and unanswerable.

At the end of November, 1900, Lord Kitchener took over the Command-in-Chief. In that month the railway was thirty-two times

interrupted by the enemy. The Boers again over-ran the Transvaal and Orange Colony. The operations against them, during the past fourteen months, if less exciting, have been more arduous, and if they have resulted in upwards of 18,000 additional prisoners, the capture of vast munitions of war, in keeping the railway clear, they have demanded a tale of life and vigilance, of suffering and endurance, which claims the warmest gratitude of the nation.

II.—POLICY OF HIS MAJESTY'S GOVERNMENT.

The policy of His Majesty's Government under these circumstances was defined by the letter of the Secretary of State for War, constituting a message to the Army in South Africa, and published upon the second anniversary of the commencement of the war by the Boers, and of their invasion of Natal. It was as follows :—

"WAR OFFICE,

"*7th October, 1901.*

" My Dear Vincent,—I am very much obliged to you for your letter telling me that you propose to return to South Africa, but offering to remain and raise fresh troops or assist the Government in any way which may be required.

" I need hardly say that the Government are fully conscious of the patriotic and effective help given by your regiment and yourself, as well as by the other Volunteers who have served or who are serving in South Africa. But at the present moment I do not think we need call on you for a further effort.

" I am in daily correspondence by telegraph with Lord Kitchener, and there is no single demand which he has made on us which has not been promptly met. We have, roughly speaking, 200,000 men, with 450 guns, in South Africa, and over 100,000 men under training at home. We have, therefore, no difficulty in keeping up the field army to its requisite strength by drafts, and if a further call be made on us we are in a position to meet it with the utmost promptitude.

" Notwithstanding this, there seems to be an impression abroad that the close of the war is being in some way retarded by a scarcity of troops or want of mobility in our columns. Our last returns from South Africa show that besides providing supplies from here for 314,000 persons directly or indirectly connected with the war, we are feeding 248,000 horses and mules in that country, and we maintain in South Africa a reserve of four months' food supply for men and animals. There are at present in the field 69 mobile columns, perfectly equipped for service with picked commanders, and we deliver at South African ports a

monthly supply of nearly 10,000 remounts, so that, apart from horses taken from the enemy, we continue in advance of Lord Kitchener's requirements.

"I am urged by a good many correspondents at the present time to give Lord Kitchener a free hand, and to push the war by sharp and effective strokes, and it is suggested that there is inactivity or apathy on the part of the Government, which is causing many people in the country serious concern.

"The strain of the year has hitherto been borne by the English people with patience and equanimity. It is no wonder that its continuance should cause anxiety. But if that anxiety is caused by any of the considerations mentioned above, it can speedily be set at rest.

"The Home Government have never in any way interfered with the military dispositions of Lord Kitchener, in which vigorous prosecution of the war they have entire confidence. They have neither spared men nor money to assist him in his difficult task of chasing small bodies of the enemy over an area the size of France and Spain, and defending thousands of miles of railway against attack.

"Lord Kitchener took over the command on 29th November, 1900. On one occasion only since then has he asked for more troops. In December, 1900, when De Wet forced his way into Cape Colony. Lord Kitchener requested that drafts should be sent to replace casualties in the Imperial Yeomanry, which had sunk from 10,000 to 6,000; and he suggested that an appeal should be made to the Colonies to send fresh contingents in the place of some 5,000 over-sea Colonials who would soon be time-expired. He, therefore, asked for 9,000 men.

"In response to this we despatched 4,800 trained cavalry or mounted infantry within six weeks; we opened immediate recruiting for 16,000 Yeomanry; we accepted fresh Colonial contingents at Imperial charge; and in all we landed in South Africa 61,000 fresh troops in the first six months of 1901.

"We also found arms and equipments for over 20,000 men locally raised in South Africa.

"I will not now enter into the question of the insufficient testing of the Yeomanry, as I am carefully investigating the responsibility for it. But it should be remembered that new levies would have been brought under training earlier, but for the universal opinion of our military advisers in South Africa and at home, from September to November, 1900, that the war had reached a stage when fresh troops would not be required. It is, I think, sometimes forgotten that throughout the year we have had the advantage of Lord Roberts's advice at the War Office, which alone is a guarantee of the cohesion existing between the Government and Lord Kitchener.

" You may make it perfectly clear to those with whom you come in contact in South Africa, that the Government will not flinch from asking the country for any sacrifice, which may be necessary to bring this struggle to a speedy close on the lines already laid down. No Cabinet Council could advance the preparations already made to this end; indeed, special meetings of Ministers might indicate a want of confidence in the way the operations are conducted in the field, or anxiety as to an issue on which the mind of the Government and the country is finally made up.

" Yours very truly,

" ST. JOHN BRODRICK."

By desire of the Council, I am here to lay before you the " Further Personal Observations and Impressions" recently formed in the military districts south of Pretoria, in personal communication with the principal authorities—military, political, commercial, and agricultural.

III.—THE COMMANDER-IN-CHIEF.

It is needless to say aught of Lord Kitchener himself. His vigorous personality, his grasp and energy, have made his name and career landmarks for ever in our military history. Up soon after daylight at Pretoria, he keeps touch, by telegraph, with all the districts and scattered columns over an area fifteenfold that of Great Britain. By breakfast-time he has seen the chief of every department of the Head-Quarter Staff, and the day is comparatively clear for consideration of the most complicated military, political, mercantile, and social problems which ever presented themselves to the commander of an army. Nor is his task lightened by the Parliamentary and administrative system in the United Kingdom. Not infrequently the most extravagant misstatements, either in Parliament or the Press, involve much personal trouble, while every detail of expenditure in South Africa demands constant supervision by one who is determined to have money's worth in every branch. It may be that such an individual hold of affairs, and insistence on knowing all that passes, makes for excessive centralisation in so enormous an area; and has a tendency to encourage avoidance of responsibility for local action by asking for authority and instructions from Head-Quarters. But those who know how ready Lord Kitchener is to recognise capacity and decision are assured of his personal support if they act with vigour and judgment, even if the full measure of success be denied. And whenever possible he sees for himself. No one ever knows if the Commander-in-Chief will not suddenly appear without a whisper of warning at the most distant point, impatient only with the hesitating and any who, not knowing their own minds or careless in their duty, are

unable to put him quickly in possession of current circumstances. The strain of such work cannot fail to be great, and it is almost unrelieved by any relaxation or physical exercise. But with the added help of General Sir Ian Hamilton, as Chief of the Staff, it is to be hoped that Lord Kitchener will be able to remain in South Africa until at least all armed resistance is over.

IV.—STRENGTH AND COMPOSITION OF THE ENEMY.

Of what does this armed resistance now consist? So far as can be calculated, there are not less at the present time than 10,000 of the enemy still in the field. Of these, 8,000 would be in the Transvaal or Orange Colony, and 2,000 in the north-east and north-west of Cape Colony.

The enemy has probably lost 10,000 lives in the war from all causes. That number added to a like figure still in the field, and an equal one of foreigners, added to the prisoners, gives the strength of the forces as 65,000, with which they declared war. In this connection the reported statistics of the 4th Ward of the Vryheid Commando are interesting. It consisted in 1899 of 188 of all ranks. Of these, 3 have been killed, 2 wounded, 12 have surrendered, and 8 rebels have joined.

So far as I have been able to ascertain, the Boers began the war with a cash capital of about £5,500,000, which was augmented by about one-third from the forced working of some of the mines.

It is a mistake to suppose that although the commandoes still out are desperate, so far as the majority are concerned, determined to hold out until the last rifle has been captured, that they are mere banditti. Indeed, many appear from all accounts to consist of the sturdiest remnants of the hostile forces, supplemented by "bywoners," or the poor Dutch—often younger sons having to go afield for their living—who "live by" a landowner and either farm some of his land on a half share of profits, or graze cattle upon his veldt on a similar understanding. They are led by Commandants Botha, Delarey, and De Wet—all anti-war, anti-Kruger men—actively supported by ex-President Steyn and Commandant Viljoen. The Orange Free Staters are greatly in the majority and the most obstinate in refusing to listen to the Transvaalers' plea of weariness. The men who led the late Republics into this disastrous war, which, if costly and irritating to us, has been one of extermination to themselves, have for the most part given up long ago, or are anxious to do so. When in August last the celebrated pastor of the Dutch Reformed Church in Graaf Reinet,—the centre of the Bond agitation—the Rev. Charles Murray, journeyed, with his son, at no little risk, to a meeting-place with De Wet and Steyn in the interests of peace,

he met with absolutely no response. Nor is there any sure indication that despite the capture of many thousands of prisoners since then, and the infliction of heavy loss in some cases, that a very different temper has come over those in the field. Further, there is not reliable evidence that they are greatly pushed for food, for horses, or for ammunition. They appear, on the contrary, for the most part well fed. Their horses are fat, and they fire, not like the Boer sportsman after buck, only when certain of his quarry,¹ but at long ranges and in profusion, as if they had no fear of scarcity.

How this state of affairs still exists is difficult and impossible to explain, but exist it unfortunately does, and to ignore it is simply to invite disasters, by avoidance of proper preparation and precaution.

The fact is, that although the wearing-down process is telling little by little, the enemy is active at many different points far removed from each other—around Aliwal North, Clanwilliam and Boshoff in Cape Colony, between Klerksdorp and Lichtenburg in the Western Transvaal, around Bethel and Ermelo in the Eastern Transvaal; around Lindley and Frankfort in the north, and around Bethlehem, Reitz, and Ficksburg in the south and south-east of the Orange Colony; and also north of the Pretoria-Delagoa line.

V.—THE SITUATION IN CAPE COLONY.

Closely allied to this activity of the enemy is the situation in Cape Colony. The total white population is 510,000. Of these about 300,000 are Dutch or of Huguenot-Dutch extraction. Not less than 15,000 have joined the enemy. Some few are joining still. This is a state of affairs which might have been fully anticipated. Sir William Butler writes ("Life of Sir George Colley," p. 334), that at the time of the war in 1881, "everywhere through the Cape Colony up to Cape Town itself, the expressions of sympathy with the Transvaal Boers and protests against their coercion were gaining in force and friendliness every day."

The Afrikaner Bond had been formed in the preceding year; and while not a little answerable for the disastrous peace after Majuba, laboured incessantly, openly and secretly, to goad on President Kruger in his wild designs; and to overcome the hesitation of the Orange Free State to conclude an offensive and defensive alliance with the Transvaal. How it succeeded, despite the efforts of President Brand, Mr. Fraser, President of the Bloemfontein Raad, and other far-seeing and patriotic men, the untoward treaty signed at Potchefstroom in 1889, and acted upon

¹ Just before the war the Boers were convinced that it would be nothing more than buck shooting, so little did they esteem the shooting ability of the old enemy of Laing's Nek, Ingogo, and Majuba.

ten years later, stands witness. "The centre of the movement is in Cape Town," said President Steyn to Count Sternberg at Bloemfontein, on 21st December, 1899, "and," he continued, "the country is far more hostile to the English than the Free State itself."

That the Republican leaders were misled by the numbers and attitude of the Bond there cannot be the slightest doubt. They counted upon a spontaneous anti-English rising, and, fortunately for us, were themselves tempted by the grass lands of Natal, the comparative nearness of Durban, the diamonds of Kimberley, the possible capture of Mr. Rhodes and the stores of Ladysmith, not to throw all their strength into the arms of their sympathisers.

For their comparatively quiescent attitude in the early days of the war we owe no small measure of gratitude to the Hon. W. P. Schreiner, then Prime Minister, at Cape Town. His counter-signature to the proclamations by Sir Alfred Milner, of 12th October and 17th November, 1899, had an undoubtedly restraining influence. The one warned all Her Majesty's subjects not to enlist or engage themselves in the military service of the Republics, or in any way to aid, abet, and assist either of the Republics in the prosecution of hostilities, or supply any merchandise to any subject thereof. The other made known that all Her Majesty's subjects might rest satisfied, that by maintaining a loyal refusal to be commandeered by the invaders they would not fail to secure a full recognition and fair compensation for any actual injury which might be done to them because of their loyal adherence to that allegiance.

Mr. Schreiner went even further than this, despite active family hindrances which would have deterred many men. The instant he received a copy of the Kruger ultimatum on 9th October, 1899, this telegram was sent to all the field cornets throughout Cape Colony:—

[TELEGRAM.]

" Schreiner,
" Prime Minister,
" Cape Town,
" 9th October, 1899,
" To Field Cornets.

"Throughout this time of trial when feelings run so high, I look to you with great confidence to use to the full the undoubted influence which you possess in your ward to quiet and soothe race antagonism, and specially to counsel and advise any who you may perhaps think may be led into any wrong or rash action by the strength of their feelings, that they should refrain from such action, and should afford in this way a striking proof of the truth, which I do not doubt, that the people of this

Colony are loyal subjects of Her Majesty the Queen. I believe I can rely on you to support me in this, and by so doing you will help greatly the cause of peace in our beloved country."

It is a duty to bring these facts to recollection, lest honest effort be forgotten in the heat of racial conflict.

An undoubted error was the non-proclamation of martial law throughout Cape Colony as in Natal, at the commencement of the war, and allowing the indiscriminate landing of all persons (including many alien recruits for the enemy), and of goods. This is to be accounted among the laches of the campaign. Now, two years too late, the error has been repaired, but not until 15,000 Cape Colony youths and 5,000 foreign filibusters, at the very least, have joined the hostile ranks, and not until many secret stores of rifles and ammunition have been filled. Perhaps it is hoped to make up for the tardiness with which this necessary precaution has been adopted by vigour in its administration. Unfortunately this vigour is not always attended by all the tact, the give-and-take essential to a successful police system. Although I personally have received nothing but welcome and kindly reception, it is impossible not to see that some of the proceedings from the landing stage onwards are giving great offence and irritation, even to the most loyal and well disposed.

The Official Martial Law Rules leave nothing themselves to be desired, although Military Law itself needs revision. The manual is admirably drawn, but in some cases insufficient attention is paid to the clear statement in Clause 3, to the effect that :—

"Those who administer martial law should be careful to confine their exercise of arbitrary power to acts directed to the preservation of the peace and frustration of the operations of the enemy, and remember that after the repeal of the proclamation until the enactment of an Act of Indemnity, there is nothing to prevent any person whose liberty has been curtailed, or whose proprietary rights have been infringed contrary to the provisions of the ordinary law, from bringing an action for damages."

The success of the Boer commandoes in obtaining food and shelter and recruits in Cape Colony, and in penetrating to the inaccessible regions of the far west, and even so far south as Malmesbury, within 60 miles of Cape Town, affords ample evidence of the great danger we have for the time escaped, and to which we may still be exposed now or hereafter, unless the greatest care and caution be exercised.

Truly many a time and oft we have had extraordinary luck, and it is by luck and perseverance we have saved South Africa. But greatest providence of all, that the political head of the nation was a statesman of the matchless judgment of Lord Salisbury. It is probable that no one

else would with equal honour have avoided any foreign complication, other than that in China. Apart from its effect on the enemy and strain of war on ourselves, those sea communications which have remained absolutely free would for the Western ports in Europe, from the Mediterranean, from Goree and the African ports of France, have been seriously endangered, demanding for each transport of a powerful convoy.

Again, among the omissions must be cited the neglect to have provided sufficient military commandants of adequate tact, experience, and above all, common sense for occupied places. This in Cape Colony has led to the administration of martial law being now placed to some extent in the hands of the resident magistrates, subject to the control of military district administrators. Although in all cases this change cannot be regarded as satisfactory, and is very adversely viewed by many on political and local grounds, it may on the whole prove for the best in the long run, and in the difficult conditions prevailing. So far as the special military courts are concerned, they—if all like that at which I was present, under Colonel Sprot, for the trial of Commandant Scheepers—are models of patient justice.

Sir Gordon Sprigg, the Premier, and the Colonial Government have, as the result of "continually pressing on Lord Kitchener the duty of the Colony undertaking as far as possible the work of clearing their borders of rebels and invaders," taken over three-quarters of the charges in the Colony (amounting to £250,000 a month), and the direction of a Colonial force. It consists of the Cape Mounted Riflemen, the Cape Police, all District Mounted Troops and Town Guards, the Western Province Mounted Rifles, Scott's Railway Guards and Sharpshooters, the Queenstown Volunteers, the Frontier Light Horse, the Kaffrarian Rifles, the Midland Mounted Rifles, and the Colonial Light Horse. These forces numbering about 18,000 men are divided into two divisions, the first under Colonel Lukin, D.S.O., operating in the south-eastern and eastern counties; and the second under Colonel Crewe, C.B., operating in the south-western and western counties of the Colony. Military operations in the thickly populated native reserves of the Transkei also remain in the independent hands of the Colonial Government.

VI.—DISTRIBUTION OF HIS MAJESTY'S FORCES.

The next point to be considered is the present composition and distribution of His Majesty's forces. Commandant De Wet was unfortunately right in his observations to the Dutch peace envoys, that the more the Boer forces were scattered, the greater the difficulty in locating and bringing them to action.

No language can adequately convey to a person who has not seen it, the colossal extent of the country—its endless plains, broken by dongas and sprouts, by mountains, by neks and passes. Yonder range of hills appears in the clear morning air to be an easy walk. It is thirty miles away. The plain appears flat as a pancake, without an obstacle of any kind. But between you and the hills—one so like the other it is difficult to tell them apart—are half a dozen dongas you cannot see till at their very edge, and each large enough to conceal an entire commando and its horses. There is a hidden valley beyond, and in it a dry water-course, which after a half-hour of deluge, about four—probably following an awful dust storm—will be impassable for twelve hours. Nor does this fill the sum of the difficulties attendant upon military operations. There are thorn bushes to be searched for snipers and flanks to be protected. Every inch you travel, in close order or opened out, the whole of your column and every movement, the number of your wagons and oxen, can all be seen from earliest dawn. You will probably have thunder and lightning, which may stampede some of your horses and mules, kill donkeys, for they cannot stand a cold rain, some of your oxen, and very likely injure one or two men. And then at night you find yourself but half way to the objective. When you get there the range, almost impregnable by nature, has been made quite so by art and hard work. You will be sniped at most of the way from sides and centre, and if you think of outflanking the enemy, you will find your horses are dead-beat and cannot raise a gallop, and that the enemy by a quick change of position has swung his front to the flank.

True, the country has not got bigger since the war commenced, but we know it now, and did not do so before.

Nor will you find, save in some chosen spots of the Transvaal and Northern Natal, a blade of grass for your oxen and mules, very likely no drinking water, and certainly not a morsel to eat for man or horse.

If every farm provided forage and food, then the columns could move without transport, but as it is you must carry rations for your men, 6 lbs. a man for each day, including tins and cases; grain or oat hay for the horses and mules, hay for the oxen; independently of officers' kits and messing, comforts for the sick and ammunition. You are from 30 to 100 miles from your base, 20 to 50 miles from any lateral support.

There are between sixty and seventy columns of from 1,000 to 2,000 of all ranks moving in such conditions over the country. They employ from 70,000 to 90,000 men.

An Austrian officer (Graf Sternberg, "My Experiences with the Boers," Longmans), says:—"No Continental Army would have done better than the English with the same or even greater numbers; and I doubt if, as regards practical equipment, technical smartness, and readiness, a Con-

tinental Army would have done so well. The Boer is an enemy such as never has been and never will be met again, mounted sharpshooters, provided with the best of arms, acclimatised, fanatical, and accustomed to campaigning, are very formidable opponents, and cannot be wiped out like mere herds of armed men. It is to be remembered that the Boers have the sharpest eyes conceivable, and that they understand as no one else does how to cover themselves from view."

And again :—"The Boer is a man of ambushes and of the trickeries of war. At places where an attack was probable, no trenches were thrown up, that nothing might disturb the advance to certain destruction. These subtleties rendered reconnaissance very difficult. The reconnoitring patrols had to examine many square miles of barren country and spy the enemy. When the Boer ventures into the open, he succeeds in hiding himself from the view of the scout with marvellous adroitness. A further difficulty for the reconnoiturer is the matter of water. A patrol is bound to avoid all farms; so where are they to drink? And in South Africa one must drink every two hours. For the English main body the question of water is still more difficult. An advance is limited to the next watering place."

VII.—THE BLOCKHOUSE SYSTEM.

In addition to the columns, there are 4,000 blockhouses to be manned, and although the majority only take a non-commissioned officer and six men, there are many larger ones at bridge-heads and important stations; so that the average call of each blockhouse is for ten men, there is a force of 50,000 men, when the further thousand now being erected are complete.

The blockhouses are at intervals from 1,500 to 3,000 yards, by the side or adjacent to the principal railway lines and roads of communication, or lines of junction. They have been erected by or under the direction of the Royal Engineers, who have had hard work in this respect. As the picturesque "Linesman," the author of "Words by an Eye-Witness" (Blackwood and Sons), says:—"No branch of the Army has done better or more hazardous work in the campaign." The blockhouse walls consist as a rule of sheets of curved corrugated iron, supporting 24 inches of rammed stone ballast, and inside a cistern for water with reserve rations for a week. Each blockhouse costs from £50 up to £200 if of masonry, the average working out at about £70. The garrison is supplemented by two dogs, which are not only a useful adjunct to the sentry, but invaluable in many districts in adding to the larder, under the direction of native scouts.

From two to three hours' work a day is required of the blockhouse crew for the perfecting of the outer defences, the covered ways, the

barbed wire and other entanglements, the rifle-pits, and the spruits, to prevent the crossing of vehicles.

Between the blockhouses wherever possible are stretched from ten to twelve strands of barbed wire, hung with spring guns, rattles, and other automatic alarms. So soon as a sufficient supply can be obtained, uncuttable barbed wire will be placed between blockhouses.

Life in the blockhouses is greatly preferred to the trek, and even to garrison life. It is dull, but free and open, and unattended by regimental worries. But it does not do to leave regiments in them for too long a time. The men get out of condition, and still worse, out of hand; for except for occasional inspection, they are left almost entirely in the charge of non-commissioned officers, and often of young corporals or lance-corporals. The work indeed demands steady and seasoned troops rather than raw hands. For three months there may be no alarm, and then without warning the line may be rushed, and if the enemy gets across there will be a great stir—court-martial and disgrace. Many of the blockhouse garrisons go in largely for gardening, ornamental stonework, and the decoration of their surroundings by dummy sentries and artful tricks. The South Wales Borderers and the Border Regiment are perhaps first in this respect, the officers giving prizes, and the Grenadier Guards between De Aar and Naauwport come next. As the train passes, books and newspapers are thrown out to the men eagerly waiting for them, to help while away the time, and a supply train brings up their rations daily.

The greater portion of the railway from Beaufort West to Pretoria and its branches to the north, east, and west is blockhoused, and the success of the system as regards the safety of the line has been great. Its extension into other districts of Cape Colony, the Orange Colony, and the Transvaal will also serve to confine the enemy within certain areas, and to hinder his escape from converging and pursuing columns. The bringing over of specially enrolled time-expired Indian troops for the blockhouses would be very advantageous.

VIII.—LORD KITCHENER'S AVAILABLE FORCES.

Although the total number of troops in South Africa is, as Mr. Secretary Brodrick stated, "roughly speaking 200,000 men," it is easy to see that not more than 140,000 at the most can be available for the field. Deductions have to be made for at least 10 per cent. (or 20,000) employed at Head-Quarters or in divisional, brigade, and regimental offices, and posts, or as bandsmen, military police, or batmen. 15 per cent. (or 30,000) in non-combatant services (Army Service Corps, R.A.M.C., Ordnance Corps, Railways, Remounts, Transports, etc.). 6 per cent. (or

12,000) on the sick list. 2½ per cent. (or 5,000) time expired, or awaiting passage home on divers grounds. Added to these deductions there is always a small percentage who in rest camps, convalescent camps, base camps, or in some way or another manage to remain lost to their regiments even when fit for duty, not betraying their whereabouts by making claim for pay until it amounts to a considerable sum. These men can only be traced out by the personal visits and census of alert officers, specially detailed for the purpose, and of sufficient rank to say that officers detaining them as servants, waiters, grooms, clerks or orderlies, have no authority to do so, and to order them at once back to their corps. At the same time a smart sergeant-major would probably find them more readily, for many are the devices for remaining "perdu."

IX.—THE HEALTH AND MORALE OF THE FIELD FORCES.

The general health of the troops is excellent. The proportion of sick is barely 1 per cent. above normal in time of peace, and the outdoor life in the most perfect climate in the world, coupled with enforced abstention from alcoholic and other excesses, and moderation in tobacco, has probably added five years to the lives of the hardy and seasoned soldiers of which the Army in South Africa now mainly consists. What their courage has been in battle the nation knows, what their patience has been on the march all associated with them know, and for their general conduct hear Father Matthew, that gallant chaplain who cheered the retreat from Dundee, who comforted the wounded and the dying on the glacis top of Nicholson's Nek, with a rain of bullets all around. These were his words to me, as he threw parcels of literature to the Border lads from the passing truck, and they are corroborated by many a gallant Church of England and Presbyterian chaplain:—"I have been with the Army in the Field since October, 1899, and mainly associated in Natal and the Transvaal with the Irish Fusiliers, the Dublin Fusiliers, the Connaughts, the Inniskillings, and the Border Regiment. Although I have taken the greatest pains to ferret out and trace to its source any allegations of misconduct against the soldier, I have never come across a single authenticated instance of outrage of any sort. I have frequently seen a soldier deprive himself for the benefit of a prisoner, and frequently he has been ridiculously kind to the enemy. I do not believe there has ever been an army in the field so well conducted and so humane."

At the same time there are many weary men sighing for home, and concerned at the gaps resulting from their two years' absence from their families and the prospective loss of their civil employment. Especially is this the case with the 94 per cent. of Reservists, who, despite all predictions to the contrary, responded so nobly in 1899 to their country's

call. A considerable proportion have already returned on the expiration of their term of service; but many still remain, and it saddens them to hear of the funds for women and children so generously provided two years ago running low, and to receive letters even from public and municipal quasi-military institutions, to the effect that the prolongation of the war beyond all anticipation has necessitated the filling up of the place. Those who would benefit the soldier in the Field Force—and who would not?—have readiest means at hand in contributing to remove all anxiety about wives, children, parents, and civil employment among those still fighting in South Africa. Generous as has been the response to the Field Force Fund for comforts and Christmas luxuries, and acceptable as they have been in all cases in which they have reached their destination by the help of the "Officers in charge of Gifts," Lord Kitchener desires that it should be known that while the Field Force Canteen—a wonderful organisation under the Army Service Corps, and directed by Major Barton, formerly Adjutant of the Civil Service Volunteers, first formed in Natal, and now doing a trade of £500,000 a month, at over sixty branches—is able to supply all comforts to the Army, free of duty, at small cost, and not infrequently as gifts, the best present to the soldier is to home and local funds, and above all, keeping open place and employment. Underclothing is always acceptable, however—shirts, drawers, socks, handkerchiefs, and thanks to the exertions of the shipping and railway companies, parcels generally arrive sooner or later—delay being often due to the enormous block of goods awaiting freight at Southampton, and awaiting delivery at South African docks.

Although it must be recognised that the creation of classes allowing some to go home and not others is attended with some difficulty and some risk, the whole future of the Army and of recruiting requires that effort should be made in this direction.

Some regiments too, who have had especially hard work since the commencement of the campaign, are—as the saying goes—"fed up with fighting," and should be relieved by battalions from home or India. This applies also to battalions of Guards. The newly-arriving battalions might take over the men on first engagement, and those (of whom there might be not a few) who volunteered for one reason or another to "stick it out." The sea passage and land journeys cost about £17 each way per head; the relief of 1,000 men therefore costs £34,000. But it is worth this expenditure, not only to obtain fresh men, but also to afford that satisfaction to all ranks, which is part of the essential expense of a voluntary Army. The relief should, however, be effected in the early spring, so that the men may not have to meet the rigours of a British winter, or a depressed labour market, upon landing.

X.—THE GENERALS.

There are upwards of 40 generals employed in South Africa, independently of column commanders. Five generals are at Head-Quarters, besides General Barton, the indefatigable commander of the Military District of Pretoria, but the great majority are at close intervals upon the Lines of Communication. They are all ably chosen, kindly disposed, experienced officers, who do not a little to cheer the weary by friendly encouragement and generous hospitality. But their jurisdictions and duties sometimes overlap. "What General are you under, Colonel?" "My dear fellow, I have not the slightest idea. When I am still, I am under General A; when I begin to move, I come under General B, and I march into the domain of General C; while General D comes to inspect me, and, while reducing my convoy, swells the baggage column with wagons galore for a few days, so I suppose he has something to do with me. But I have kept straight with all the 17 generals the column has come under in two months by making reports in triplicate, and sending one to each; besides which, I am sometimes stimulated by a cypher message from Pretoria to the effect: 'Chief wants to know what you are doing, and what captures. Has not heard for last few days. Requires greatest energy and activity.' So you see I am thoroughly well looked after."

It is very necessary to have a general near at hand when a column starts on trek, for his authority is desirable on many matters, and equally upon its return. But now that the commands in the field are only of dimensions for comparatively young and active officers, it may be no longer necessary to retain so many upon the line, for each general officer means a large staff, from five or six to a dozen, many horses, ponies, mules, orderlies, a railway coach, and other items, besides considerable expenditure, direct in maintenance, indirect in the discharge of his duties. Perhaps larger and more definite districts, and responsibility therein for everything, might prove advantageous.

It is by no means easy for the Commander-in-Chief whatever his theoretical authority, to reduce the number or the distribution of generals and high officers very likely provided by Pall Mall, without previous consultation with him. The Army has fast hold of the false idea of those unfortunate doggerel lines:—

"For Generals who chance a bit when trying Boers to squash,
There are always billets waiting at a place called Stellenbosch."

The public, too, are apt to attribute an altogether erroneous interpretation to the cessation of employment on reduction of establishment, or to a transfer from one apparently important post to a less well-known one.

XI.—OFFICERS.

The same observation applies more or less to all officers, and especially those on the staff employ, and in regimental or column command.

The present phase of the campaign has given rare opportunity to comparatively young officers who would otherwise have had to wait long for their chance. It has brought many exceedingly able men straight to front—Douglas Haig, Scobell, Pulteney, Plumer, Henniker, Colletor, De Lisle, Colvin, Colville, Basing, Firman, and many others.

In the German, French, Austrian, Russian, and Italian Armies there is hardly anyone under the rank of full general who has seen a shot fired except upon the rifle range, or has any practical knowledge of modern warfare. While this should modify criticism, it gives the British Army for the next 10 years an advantage over all others, if it is only allowed to perfect in peace what it has learnt in the field.

No Army is so full of young men with war experience. It must, however be admitted that the anxiety of the charge of a column in guerilla warfare imposes a heavy strain upon the strongest nerves.¹ The number of troops is limited. The country is unknown. It is very difficult to keep up the vigilance of all ranks, without overtaxing and fussing them. The column may go many days without a sign of the enemy, and then when least expected, be heavily engaged. A mistake is so easy to make. Action as distinguished from inaction, an error of commission from an error of omission, is so mercilessly taken hold of by office desk critics thousands of miles away, without the least atom of knowledge of one of the local conditions or circumstances, that instances have not been wanting of great opportunities being allowed to slip by sooner than run any risk. The context of the lines just quoted, are not inapt:—

“So Sticky is in double mind, he longs to make a bag

Of Boers, but is in mortal funk, lest he might strike a snag.”

The Army knows the instances. There is no necessity—even if it were justifiable—to name them. But the nation suffers for proceedings

¹ “A night attack! Let him who has ever taken part in one recall the sickening, wearing anxiety of it. Did he not feel as if the force he rode with was clothed in luminous paint, and hung with bells, because of his very agony of hope, that it was invisible and soundless? Was he not morally certain that he was leading them in a futile circle, because his whole honour and hopes for life depended upon his leading them straight? Were they not discovered every moment by hostile bushes—nay, shadows, because discovery meant ruin? Few men can lead or accompany many night attacks and keep their nerve, but of those few the Army in South Africa has luckily numbered many men whom an era of dangerous night work coming after two years of incessant strain still sees unshaken and confident, and with confident men behind them.”—“Words of an Eye-Witness.”

boldly condemned by one lately in highest authority, and corroborated by the talented pen of General Sir William Butler, K.C.B., who speaks of "the usual gibbeting which a free press, priding itself on being an expert in military criticism, has always in stock for the encouragement of commanders."

XII.—WAR CORRESPONDENTS.

In this connection a word should be said as to the war correspondents. It is not of them as a whole that the Army has the slightest complaint, of Winston Churchill, Amory, Pollock, Montague Bell, Bennet Burleigh, Pearce, or Wallace. But the sub-editors who sit at home, and for the sake of a selling headline and passing sensation, stab their countrymen doing their best according to their light, do grievous injustice. The war correspondent has to rough it with the roughest, and if he is to see anything, to be in the van with no prospect of credit. When the work of others is done, his hardest labour commences. The text hand cablegram, the tussle with a timid censor, the ride to the telegraphic office, the struggle for priority.

This latter though has been of late removed. Last summer Mr. Gwynne, the representative of Reuter's Agency, obtained, as he often does, the earliest information. It was of two events which greatly interested the British public. There was no official confirmation of them. They proved accurate, save in a very minor detail—the name of an unknown Boer commandant. But upon that an order was issued from London that only true news was to be allowed to pass the Press Censor. That was an extension of his functions—"seeing that no telegram goes" (he has nothing to do with letters home) "likely to give hints or information to the enemy, or to injure the Armies of the King." If the censor does his duty properly he is in his office at all reasonable office hours. He cannot know what has happened or is happening outside. And so the revision of official news is added to the duties of the Commander-in-Chief, and although the truth or falsehood of news is only a matter between the correspondent and his principal, the energetic representative is thus brought down to the level of the most supine.

XIII.

It may be interesting now to glance at the various arms of the forces in the field, on the harmonious working of which the troops entirely depend. One hesitates almost to do so, lest separated from the rough and tumble of the campaign, one should in innocence be guilty of the

slightest injustice to either the officers or men of any branch of the Service. Let us put first of all

THE ARMY SERVICE CORPS,

and this not only because of its extraordinary success, but because round its centres the working of the entire machine. For the attraction to its rank of officers of first-class ability, many of whom could earn in commerce treble their Army pay, and for its recruitment to a high standard, the Army will always owe a debt of gratitude to Sir Redvers Buller, whose name is as grace before meat to the soldier. Thanks to his foresight, a full meal has been rarely missed in this long campaign, save during the three weeks of the advance upon Bloemfontein from the West after the capture of 200 supply wagons and 300,000 rations. There is nothing to compare with the Army Service Corps in any Army in Europe, and no honour which can be conferred on Colonel Morgan, the present Director of Supplies, in succession to Sir W. Richardson and Sir Edward Ward, would be in excess of the services of himself and his fellow workers, for all strive heartily up to the closing injunction of the circular of 4th December, 1900:—

"It is hoped that you will make every possible supply arrangement you can for the comfort and welfare of the troops generally."

At the present time the Army Service Corps is rationing every day nearly 300,000 persons, 230,000 horses and mules, and 45,000 oxen, over a country producing nothing, with only trunk railways, and with no roads; and maintaining in every one of the thirteen military districts, at hundreds of sub-stations, not only sufficient stores for current use and a 10 per cent. margin, but for four months ahead in case of accident. Every day forty-two 10-ton trucks of supplies for the Army have to be brought up 1,000 miles of railway, besides all the civil stores.

There is one functionary whom I would bring before you for honour. He sits in a dark London office from morn to eve, opening tenders, making contracts, assailed by every influence—the prey of purveyors, inventors, and carriers. The honour of the fray is not for him. I know not even his name. But his duty is ever to be looking six months ahead, to make economical purchases throughout the world of all that the Army will require, and arrange that it shall arrive at the front in good time and in good condition from every port in the Empire and the universe.

Nothing like it has ever been attempted before, and full credit is due to every individual concerned, for up to this moment there has not been the slightest hitch, either on land or sea, so far as the A.S.C. was concerned. The Army has indeed been fed in a manner which even the most captious can only say that it has been almost too good. The feeding of the German Army in France, of the Russian Army in Turkey was absolutely child's play in comparison, for they were operating

in fruitful contiguous countries, and the food supply could not be named in the same category.

I said that South Africa produces nothing. That, however, is not quite accurate. Agriculture, fruit culture, and cattle rearing have only been attempted up to the present upon primitive lines. The rigorous necessities of the campaign have stripped it even of these resources. But the A.S.C. has formed large farms, and very well they appear to be succeeding. The Commander-in-Chief has assigned to them a credit of £50,000, and it is likely to prove a good investment. Some soils will produce four crops a year—cabbage, a green crop, potatoes, and mango. From 1,000 acres of potatoes planted near Pretoria it is expected—though the estimate may be too sanguine—to gather 8,000 tons, worth over £100,000, and sufficient for the whole Army in South Africa for five months.

XIV.—THE TRANSPORT SERVICE.

The A.S.C. is also theoretically responsible for the transport service, although for the time being a separate department of the Head-Quarter Staff has been formed for its control under Colonel Wickham and Colonel Money. Whether transport shall remain with the A.S.C. in future is a matter for consideration. It is, perhaps, the most attractive side to its duties, but there are those in high authority who think that it would be better to invest it in the field with all supply duties—the furnishing of ordnance—guns, rifles, shot, shell, clothing, and equipment, and to make the transport a separate department. Upon the other hand, many in the A.S.C., while anxious to retain the transport, would gladly hand over the control of barracks and camps to a more technical staff.

The difficulties of the Transport Service in South Africa are immense, and rendered the more so, not only by the dangers arising from the rinderpest, which has carried off 54,000 oxen in the last four months, but also of the lung sickness affecting mules as well as horses, unless most carefully supervised. The donkeys, too, which have proved very useful for slow transport ($1\frac{1}{2}$ miles an hour), cannot stand cold wet weather.

An ox-transport company consists of 100 ox-wagons and 1,760 oxen, with 2 officers, 21 non-commissioned officers and men, 13 white superintendents, conductors, and drivers, and 200 native drivers and leaders, with 10 per cent. to spare.

Each ox-wagon, with a 16-span on the line of march, holds about 4,000 lbs., and occupies 40 or 45 yards. The ox-transport company would, therefore, cover in column of route a distance of nearly 3 miles, and in reality more, for they cannot be made to keep up with military precision, and frequent casualties produce great gaps.

A mule-transport company consists of 49 buck-wagons, 4 Scotch carts, and 1 watercart, with 570 mules. For this a military staff of 2 officers and 32 non-commissioned officers and men is required with 5 civilian conductors, and 120 natives.

The transport is divided into :—

First line.

Second line.

Mule supply column.

Ox supply column.

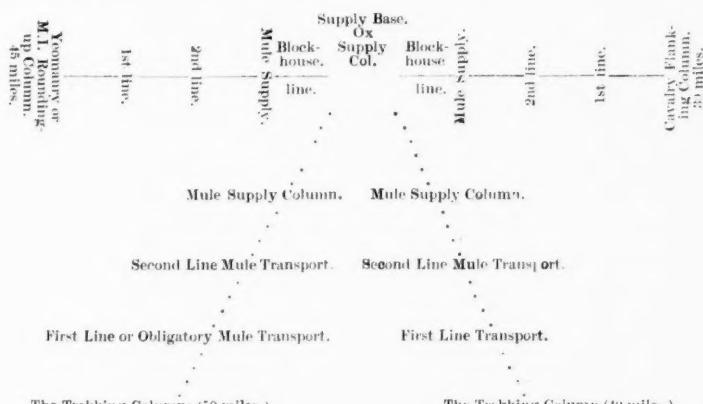
The first line or obligatory mule transport is always with the unit to which it is allotted. It conveys the fighting material, that is, entrenching tools, signalling equipment, spare ammunition, water, and medical stores. It consists of 1 machine gun, 2 watercarts, 5 Scotch carts, and 48 draught and 25 pack mules.

The second line mule transport consists of an infantry battalion of 10 buck-wagons, each drawn by 10 mules, and 1 Cape cart. It conveys two days' supplies and cooking utensils (10,000 lbs. or 5 tons in 7 wagons); the officers' baggage (35 lbs. each); the mess kit and stationery (1,438 lbs. in one wagon); the men's greatcoats (6,500 lbs. in two wagons); and the medical equipment (397 lbs. in the Cape cart)—a total of 14 tons.

A cavalry regiment can manage for two days in light order with 4,800 lbs. of rations, forage, and stores for headquarters, and carry them in one buck-wagon and one Scotch cart, with 8,500 lbs. in three buck-wagons for each squadron of 160 men and horses. Mounted infantry or Yeomanry are entitled to two buck-wagons per squadron, with one extra for headquarters and one Cape cart for medical equipment.

Behind the second line mule transport comes the mule supply column, carrying two days' supplies, and this travels to and from the ox supply column, which, guarded by infantry, acts as the intermediate feeding base to two or more columns, and a blockhouse line. Still further in the rear of the railway is the supply base. I have dwelt upon this matter, as it is one which has been much canvassed "by the gentlemen of England who live at home at ease." Sitting round a table loaded with luxuries, they declare the war will never be ended until our columns go out with nothing beyond what the men stand up in, or can carry on their little horses. Of course they never consider that the country is barren and that it would be useless to expect starving men to fight. Such a little detail as food never occurs to them. It must be conceded that ejaculatory observations on the spur of the moment, never intended to be issued as an Army Order, have contributed to the general misunderstanding on the question. But "the piano or harmonium," of

which a great deal too much has been made, was merely a chance capture from a deserted house, put upon an empty buck wagon going back for supplies, as a present to a Dutch church, but imprudently played one evening in the hearing of a general. There is really nothing better in this campaign than the way in which the columns, themselves most difficult to locate, find, and follow, have been fed, and fed so well. It may be conceded that after two years of incessant trek, both officers and men are inclined to try and make themselves as comfortable as is possible under the circumstances, and to provide against the soaking rain and a variation of 40° in the temperature within a few hours. Constant supervision over the growth of baggage is certainly necessary, but the inspecting officers sometimes forget that example is worth more than precept. No one has "stuck it out," to use the South African expression, like Lord Methuen, and he tramps along on foot at the head of his column, practising what he preaches.



The difficulty of the transport organisation is greatly enhanced, as I have said, by the losses attendant upon rinderpest and pleuro-pneumonia; but also by the necessity of inoculating the oxen against the former—a process requiring, in the experience of Veterinary-Captain Sharp, three weeks' rest, and a double injection—and also by the straying and dropping of animals on the line of march, and irregularly acquired by individuals. To obviate it a Transport Live Stock Recovery Department has been formed, under Captain Macdonald. He has five big farms and ten grazing farms under his control, and transport animals temporarily unfit for work are placed thereon, when possible, for a rest. They have, however, of course, to be carefully protected when at graze from capture by the enemy.

XV.—THE IMPERIAL MILITARY RAILWAYS.

The services rendered during the war by the Cape Government Railway and the Natal Government Railway, and all connected with them, have, in some measure, been recognised by His Majesty in the persons of Sir Charles Elliot, Sir David Hunter, and Mr. Price, C.M.G.; and should the King approve of the issue of an Imperial Star, as desired by the Colonial Governments, it may be possible to convey to locomotive and district superintendents, stationmasters, inspectors, drivers, firemen, guards, signalmen, shunters, and others who, by land and sea, have rendered material service to the Army, some Royal token of the great help they have been. But of the military railways only one man thought. He is part of the great contribution of Canada to the armed strength of the Empire. Sir Percy Girouard gave up considerable emolument in Egypt and went to South Africa at regimental pay at his own instance. On like initiative he ordered iron parts for the bridges from Norval's Pont to Pretoria, without waiting to see if they would be blown up. Pall Mall was aghast at any one having the slightest forethought and not waiting to see how much of the old material could be used, and getting tenders for repairs. But Girouard always goes express. To this circumstance we owe some of the finest work in the campaign—the lightning-like construction of permanent way deviations, and of new bridges and culverts under Major Micklem, R.E., and his sappers and the Rand Railway pioneers. A "blow-up" has become merely a little detail. Run down the river bank, through the water, and up the other side—just a little steam up and its done—over the Modder, the Orange, or the Vaal. Just fix your trestles, go on the engine yourself, and the old bridge can be used until in a week or so the iron is in place.

The Netherlands South African Railway, both in Europe and South Africa, did much both to promote and further the war. This is a noteworthy extract from the diary of Mynheer Van Kretschmar, its managing director :—

"The fire," he wrote on the 11th September, 1899, "is smouldering everywhere. England is at issue with the United States as to the boundaries of Canada and Alaska; in China she has to be constantly on the watch not to tread on the toes of Russia. In Abyssinia Menelik is growing unruly. In Ireland the tone of the press grows daily more violent in opposition to the Government policy in the Transvaal; and in England itself their policy is condemned by the labour party, which see in it nothing but the baneful influence of capital. In every country hatred of England is increasing. I grow constantly more and more certain that if it comes to a great war, however long it be delayed England will stand alone, and this circumstance will make it all the

more clearly evident that she is resolved on the arbitrary slaughter of Afrikanderdom. Nothing but good can come out of it to the Dutch race in this part of the world, although in the beginning it entails a heavy expenditure of life and money. The fall of England shall be the crown of the end of the nineteenth century. It is now nearly four years since I wrote to Heer Bake, after the Jameson raid, that I looked forward to the end of the supremacy of the English in South Africa, and believed that we were drawing near its conclusion."

This organisation has now given place to the Imperial Military Railways, and this enemy of England to Quebec's vigorous son, with his countryman, Major de Lothbiniere. The director is assisted by Colonel Cowie, Major Nathan, Major Twiss, and Captain Leggett as assistant directors, 45 engineer officers, 150 railway staff officers, whose duty it is to protect the railway officials from the undue demands of the military, and 4,000 employés—a large number of whom are soldiers. Within a few hours of the occupation of Johannesburg, Sir Percy Girouard commenced his railway service by the help of the reservists from the great railway systems, and now it runs over the 1,500 miles with only a hitch now and again. Orders for engines and 1,200 trucks have been placed in Great Britain, and are rapidly arriving, for it is the policy of Lord Kitchener that everything which the mother country or the Empire can supply for the Army should be obtained thence. But British working men should enquire how it is that their inland comrades in America can earn double their wages, and yet land an engine all put together at Port Elizabeth for £1,000 less than it can be shipped in parts on the Clyde. The Cape Government ordered 160 engines in Great Britain over two years ago and have only got half delivered. There is absolutely no limit to the coming demand for railway material; and our manufacturers might well see if they cannot bring about the standardification of the railways of the Empire, and make for stock as their rivals do in the United States.

There is only one thing about the Imperial Military Railways which grates. It is a notice outside some refreshment rooms "For Officers and Civilians only." Certainly the meals within, as on the Cape Government lines, are beyond the soldiers' pocket, and bad in proportion. But with such hundreds of soldiers travelling under circumstances of much discomfort, more provision might be made throughout the theatre of war to enable non-commissioned officers and men to obtain hot meals, non-alcoholic drinks, and filtered water at moderate prices. There are, it is true, some of those excellent Soldiers' Institutes not far off, and who do something in this way. But they are not easy to find.

The danger to which the railways are principally exposed is from mine or dynamite cartridge. The mayors and leading inhabitants,

whom the Germans used as pioneers of safety in France over the permanent way, do not exist in the Transvaal or Orange Colony. And although occasionally some such worthy ex-burgers have been put on a truck in front of the engine, they much increase the risk to the train and the need for the escort of a N.C.O. and eighteen men. Such "hands-uppers" are just the men whom a commando would like to jump into space. But the permanent-way squads look out very sharply for mines, and if they find one the ganger receives £3 reward and the boys £2.

One other fact I must mention in connection with the Imperial Military Railways, and that because it is quite without parallel in the course of a campaign. Not content with providing for military requirements now and in the early future, Sir Percy Girouard has constructed, and has nearly ready for opening, a coal line running right along the Gold Fields, which by sidings will take the coal to bunkers directly opposite the furnace doors, and tip it into them by slides from immense trucks constructed for the purpose. This will save the mines 3s. a ton upon the 1,500,000 tons they annually require, and nearly 20s. a ton upon the carriage of machinery and heavy goods, doing the work of thousands of oxen and mules, and hundreds of Kaffirs.

No greater instance could be cited of the different spirit which will animate the new system in the Transvaal compared to the old. The latter, which looked on main drainage as perdition and all progress as a step towards the grave; and the former, which goes intelligently in advance of actual requirements and leads them on.

XVI.—HIS MAJESTY'S ARMOURED TRAINS.

Another means of protecting the railways, and of checking crossing commandoes, is by the fleet of armoured trains, organised and directed by Major Nanton, R.E., another product of Canadian patriotism. They are 20 in number, and patrol the lines in all directions. These armoured trains are not of the death-trap pattern, which made so much noise and did so little good at Estcourt and Mafeking, a truck in which men were shut up by iron sheets and derailed by the first shell. They are complete trains in themselves and thus made up:—

1. A heavily-loaded ballast truck to explode a mine and test a bridge.
2. An armoured coach with Maxim gun in front, beside which sits an officer in charge of the train, and in it the gun detachment, 16 strong. Upon the roof is a revolving electric search-light.
3. A luggage van to serve as sleeping and living room for the two officers on the train.

4. The engine and tender (always running in the middle of the train).
5. A 12-pounder Q.F. gun moving round the entire circle, mounted on a truck, bomb-proofed fore and aft, in which live the R.A. gun detachment, and are stored the ammunition reserves. The firing of the gun in no way makes the truck jump the rails. There is a bit of a run back, but that is all.
6. An armoured truck containing an infantry detachment, 25 to 30 strong, and 6 Royal Engineers.
7. An armoured coach with a Maxim gun in rear.

These trains should be quite independent, but commandants frequently try to control their movements. The result has been untoward. One of these instances occurred last month, when the whole of Kritzenger's commando would have been captured by H.M.'s armoured train "Coldstreamer," under Lieutenant Baring, but for a needless check.

H.M.'s armoured train "Grenadier," under Lieutenant Spencer-Churchill, had also bad luck under similar circumstances. But there can be no doubt of the deterrent effect of these moving batteries upon an enemy destitute of artillery.

Mentioning the two trains—"Coldstreamer" and "Grenadier"—it is simple justice, as an old linesman, to give expression to the satisfaction of all leaders of "side shows" or "fatigues," at the hard work and cheerfulness of detachments of Guards. Neither officers nor men ever grumble, but take the rough with the smooth, and laughingly get the job done, while others are thinking how they will begin, or if the conditions are favourable.

XVII.—THE ROYAL ARMY MEDICAL CORPS.

Through good report and evil report, Surgeon-General Sir W. D. Wilson has been the capable and genial Principal Medical Officer of the Field Force in South Africa from the very commencement of the campaign. He has seen the labours of his corps vindicated by a powerful Royal Commission, from charges which, however well intentioned, were exaggerated and ill-timed. There were occasions when stationary hospitals and ambulance trains were crowded with wounded. There have been times when the epidemic of enteric struck at hundreds, nay, thousands, at 30, even 50 per cent. of a regiment. Admittedly the preparation for such a calamity was insufficient, nor for the contamination of the Modder River, the only source of supply at Paardeberg, by passing corpses at two-minute intervals. There was

hardly a man in the Empire, however, who three years ago would not have subscribed to the official memorandum of Sir Henry Campbell-Bannerman, when Secretary of State for War, that it was absurd to contemplate the possibility of our ever having to send more than 25,000 men over the sea. This then, was the scale upon which that Minister of War and his successors provided for the medical and other services prior to December, 1899. Within a month or so there were five times 25,000 in the fighting line, and the less able to resist disease by the speed with which they had been placed in the front. Of these, over 1,600 officers, and 19,000 non-commissioned officers and men have been wounded, while 450 officers and 5,000 men have been killed,¹ and 270 officers and 10,500 men have died of disease, and 2,500 officers and 60,000 men have been home as invalids. Not less than from 140,000 to 150,000 officers and men have therefore been through the hands of the R.A.M.C. in South Africa, in the past thirty months, and been for an average of at least fourteen days in hospital. There is hardly one of this vast number—five times the total force for which peace provision had been made upon the usual basis—who does not speak with gratitude of the devotion and the efforts of the Army surgeons, the Civil surgeons, the nurses, the bearers, and the orderlies.

Against these latter, serious charges have been thoughtlessly levelled, without, I believe, a shadow of foundation as regards those on the regular establishment of the R.A.M.C. As regards the additional staff who had to be called in from convalescents to assist in the time of emergency, they could not be held responsible, for in the nature of things the best soldiers could not be spared away from the fighting line for such a duty. Means should undoubtedly be found to have a sufficient reserve of trained hospital orderlies, lest such a contingency should again rise; and the pay and the position of the non-commissioned officers and men of the R.A.M.C. should be brought up to a higher standard, so as to attract the best men to the work. At the present time the field force is on a higher health standard than any equal number

¹ The graves of the brave, dying for their country, are upon the whole, well cared for—fenced in, and for the most part with neat head crosses or stones. This is largely due to the Loyal Women's Association. The monuments erected to their comrades fallen in glory on Spion Kop, by the King's Royal Rifles, the Middlesex Regiment, the Royal Lancaster, the Scottish Rifles, the Imperial Light Infantry, and Thorneycroft's Mounted Infantry; to the Gloucesters, at Nicholson's Nek; to the Devonshire Regiment and Imperial Light Horse, on Wagon Hill, and elsewhere, are fitting cairns to pages in history. But strangely enough lightning conductors have in nearly every case been forgotten, and damage from this cause is certain. The lettering will also want looking to frequently. The Government might well appoint a wounded pensioner, present at the engagement commemorated, to look after the graves and monuments, and to act as cicerone to the visitors, who will be many.

of individuals in any part of the Empire. Half the beds are empty, and although wounded are still dribbling in, and alas suffering much from long treks to the base of column operations, they are comparatively few in number. Barely 5 per cent. of the whole Army are on the sick list. There are only 1,000 cases of enteric, although it must be remembered that the season for its prevalence—of bad fruit and of throats thirsting for dirty water—is now. Dysentery and pneumonia account for another 1,000, and rheumatism (real or imaginary) and dental trouble for many more.

In many of the twenty general hospitals, iron buildings, fitted with electric light, and provided with mosquito nets and many other things making for comfort, have taken the place of hospital marquees. But enteric patients are said to do better in a tent than between walls. In all cases they are kept separate, and matters connected with them subjected to the most scientific treatment.

It has often been observed that the Imperial Yeomanry and other hospitals, due to private benevolence or patriotism, and now either abandoned or handed over to the R.A.M.C., were better equipped and more luxurious than those of the Regular Service. There is nothing surprising in this, for in the matter of railway transport alone they enjoyed at least quintuple the privileges of a general hospital.

It is impossible not to regard without some dismay the future of the R.A.M.C. It has long been a source of anxiety, despite many liberal concessions as to pay, privileges, and military rank. Within the past few months the Secretary of State for War has himself presided over a Commission to consider all legitimate grievances and difficulties. An even more generous rate of pay has been the result—far more in the junior grades, with the allowances, than any young practitioner, under ordinary circumstances, could hope to make. But unless a very different feeling prevails than at present, it will be in vain. The examination tests, by which fitness for advancement are to be determined, are greatly resented and declared impracticable upon a uniform basis, in a Service so many members of which are constantly abroad and scattered over the Empire.

With all the respect that is the due of the Royal Army Medical Corps for its splendid work in the field, it is impossible not to see that it is divided into two camps. The one is proud to belong to the noblest of professions, is eager to learn all it can and put everything connected with it upon the best professional footing, independently of hierarchical distinctions, military titles, and the rigid parade discipline in the sick ward and at the bed side, which is apparently the ambition of the other.

For the former there is no lack of social recognition. The school of Sir William Wilson, Colonel Sloggett, Colonel Peard, Colonel Kilkelly,

and others, has all the position and affection which culture, ability, and character invariably command in every sphere. The latter, led also, it is said, by a surgeon-general, meets, it must be acknowledged, with some jealousy and resentment; and not the less by the readiness to imagine slights where none are intended, and the desire shown to extend its medical military authority—some as far as the parade ground and the court-martial room.

The result, unfortunately, is that few of the young civil surgeons who have been attached to the Army during the war, with so much advantage, seem disposed to join the Royal Army Medical Corps on the advantageous terms proposed to them. But it is less, I gather from them, on the ground that these terms are in themselves insufficient, than that upon their apprehension based upon what they have experienced, that medical and surgical skill is excessively subservient to stars and crowns upon the shoulder straps; and, above all, to an unending multitude of useless returns, which leave little time for science and the art of healing. The result is serious, for it means, if the schools of medicine discourage men from joining the R.A.M.C. as a profession, that in time of emergency masses of young men from a lower standard have to be admitted, and these will block in their turn the senior ranks.

XVIII.—THE COLONIAL CONTINGENTS.

The war has been rich in discoveries, but the greatest of all has been the proof of the unity of the British Empire, and the determination of all Britons to uphold its integrity and honour with their lives. This alone has been worth the price. To quote once more that shrewd American critic, Captain Mahan :—

“First amongst the symptoms of the strengthening of the Imperial idea and of Imperial ties through the war, is one which gives immeasurable assurance of national power, the sure guarantee of prestige, and that is the progress towards unanimity in the nation, centring round the idea of Imperialism and finding an immediate impetus in the South African problem.”

Mr. Secretary Chamberlain fitly voiced the feelings of the country in his despatch of 15th November, 1899 :—

“The great enthusiasm and the general eagerness to take an active part in a military expedition, which has unfortunately been found necessary for the maintenance of British rights and interest in South Africa, have afforded much gratification to Her Majesty’s Government and the people of this country. The desire then exhibited to share in the risks and burdens of Empire has been welcomed, not only as a proof of the staunch loyalty of the Empire and of its sympathy with

the policy pursued by Her Majesty's Government in South Africa, but also as an expression of that growing feeling of the unity and solidarity of the Empire, which has marked the relations of the mother country with the Colonies during recent years."

On 3rd October, 1899, the Secretary of State for the Colonies had telegraphed to Canada, New South Wales, Victoria, Queensland, South Australia, and New Zealand, that the Secretary of State for War and the Commander-in-Chief would consider offers of units of about 125 men each. On 13th October, the Governor-General of Canada cabled the offer of 1,000 infantry—for the previous telegram ran—"Infantry most, cavalry least, serviceable"! On 16th October, the offer was "gratefully accepted." By October 30th, the Royal Canadian Regiment, under Colonel Otter, C.B., had been organised, equipped, and embarked. On 30th November, it encamped at Cape Town, and that day year was personally thanked at Windsor Castle by Her Majesty Queen Victoria for its glorious services.

In December, 1899, two battalions of mounted rifles and three batteries of artillery with eighteen guns were added from Canada; and in February a regiment of "Incomparable" Horse, 537 strong, was raised, armed, clothed, equipped, and conveyed to South Africa at the sole expense of Lord Strathcona and Mount Royal; and now another Canadian mounted contingent nearly 1,000 strong is on the way to South Africa.

Nor has the Commonwealth of Australia and New Zealand, that "Britain of the South," been in any way behind the Dominion. Over eighty contingents of first-rate troops have been sent to South Africa from Australia—namely, eighteen from New South Wales, seventeen from Queensland, fourteen and a battery from New Zealand, thirteen from Western Australia, ten from South Australia, and nine from Tasmania.

Concerning these soldiers of Greater Britain, 14,000 in numbers, there is no second opinion. They appear in a higher degree than any others to have the real instinct of war. Every column commander endeavours to obtain the services of some of them, and from every side one hears nothing but praise of their gallantry, their conduct, their intelligence, their horsemanship, and their skill.

It is a matter of great regret that the engagement of most of the Australian contingents now in South Africa terminates in March. It is to be hoped that a considerable number of them will be first given the rest they deserve, and then induced to stay on for another six months, so as to return to Australia for the local summer. Any bounty or concession in that respect would be worth giving. Of all troops they can least be spared. For column work and guerilla warfare they have no equals—and not least of all because they move about with their eyes open and all

their senses awake. This accounts for the considerable number who intend to settle in South Africa after the war, and with full knowledge of the subject they declare that its agricultural and pastoral prospects are actually superior to its mineral. The land, they say, has up to the present only been scratched. If these men will be a loss to Australia, they will be a gain to South Africa, and so of service still to the Empire. Behind them, moreover, are "the several thousand cadets" referred to by H.R.H. the Prince of Wales in his eloquent speech at the Mansion House, armed and equipped, and going through an annual military course at the expense of their Governments. Is the mother country asleep that it is doing so little in this respect?

Nor must one forget the drafts of the Army Medical Corps sent home from Canada and Australia, nor the nurses, for of the services and thoroughness of both there is nothing but the most unstinted praise in any responsible and competent quarter.

There has also been a contingent from India, another from Ceylon, and another from Burmah; while upwards of ninety corps have, with a total of close on 60,000 men, been raised in South Africa.

Some of these, and notably the Imperial Light Horse, the South African Light Horse, Thorneycroft's Mounted Infantry, the Natal Carabineers, the Imperial Light Infantry, the Railway Pioneer Battalions, and the Johannesburg Mounted Rifles have rendered immense service. Although the Imperial Light Horse and the three battalions of Railway Pioneers consisted mainly of Johannesburgers to the number of 8,000, and the former especially of leading men on the Rand, it must not be assumed that these corps had anything more than a percentage of South Africans. Although all that is best in the British youth in South Africa contributed their quota of service, a large proportion of the irregular regiments have been recruited from all sources, and largely by young men going out to the seat of war from Great Britain, the Colonies, and America, on their own account—jolly, light-hearted, dare-devil, reckless fellows everyone, as ready for danger and death as for a spree.

Especially is this the case at the present time when men are being engaged for the absurdly short time of three or six months. Very few of the existing two battalions of Imperial Light Horse, for instance, serving in the brigade of that splendid Colonial officer, General Sir J. Dartnell, who galloped 20 miles on Christmas night to the succour of Tweefontein, were in the original corps.

It would be absurd to deny that throughout the long campaign extreme provocation has not been productive of some few excesses and irregularities on the part of irregular corps, with occasional veiling of the eighth commandment under the verb "commandeer." But they have been few, and taking everything into account their services have

been very valuable. Indeed the war could not have been carried on without them.

The District Mounted Troops and the Town Guards have also shown good feeling.

Not the least matter for satisfaction has been the perfect cordiality which has existed between the Regular troops and those drawn from so many different portions of the Empire. This is amply shown if proof was needed, that for every vacancy in the fresh contingents from Canada and New Zealand there have been twenty applications.

XIX.—THE MILITIA BATTALION.

The Militia has had bad luck in the campaign. There has hardly been a battalion in the United Kingdom which was not ready to volunteer. But many have had to be kept at home, many sent to the Mediterranean and other stations, whilst most of those sent to South Africa have had the irksome but most vital duty assigned to them of guarding the lines of communication. Some of the battalions have now been in the field for nearly two years, and should be at once relieved. It must be remembered that many volunteered in a moment of enthusiasm, very likely asked to do so on parade—a most unfair proceeding—regardless of the claims of their dependents; and to many of the officers engaged in professional pursuits the prolonged absence has been little short of ruinous. Again, the future of the Militia must be looked to, and it will assuredly be seriously jeopardised if these battalions are kept longer away, save at their own instance. They came forward at a moment of emergency, and they should not be taken advantage of. Whatever the technical wording of their engagement, it is certain that no single individual thought he was volunteering for more than twelve months.

XX.

The same observation applies to—

THE VOLUNTEER SERVICE COMPANIES.

There are a considerable number still in the field, rendering no less valuable service than the 66 companies preceding them, and all spoken of by the Regular regiments to which they have been attached in the highest terms. Immediate steps should be taken to obtain the services of fresh Volunteers, to select and prepare them, and to afford all who are in South Africa the opportunity of coming home on the completion of their 12 months. Of course, as already said, it is expensive. But it is part of the price the nation pays for that freedom from conscription,

which it owes to the Volunteer Forces. On this subject, despite all the random talk, it must be remembered that no conscript army can be sent abroad. Neither Germany nor France can do it. Foreign service must always be voluntary.

That the British Volunteer Force will add to the 25,000 already given to the C.I.V., the Service Companies, the Imperial Yeomanry, the Colonial Contingent, and the Regular Army, I have not the slightest doubt, but the essential condition is the keeping of faith on the part of the Government. It seems extraordinary that such a moment should be chosen to harass the Volunteer Force, to which the country owes so much, with new conditions, so impossible and impracticable, as at once to stop recruiting and alarm all its members.

XXI.—THE IMPERIAL YEOMANRY.

From the Army Order of 4th January, 1900, authorising the formation of an Imperial Yeomanry Committee from leading commanding officers of the Yeomanry Cavalry, a force quickly arose far surpassing the old body in numbers, and to which indeed it contributed but a small proportion of its strength. In its formation, Lord Chesham, Lord Valentia, and Colonel A. G. Lucas took a prominent part. The two former embarked early for South Africa, and for nearly two years General Lord Chesham has acted as Inspector-General of the Imperial Yeomanry in the field. The services he has rendered in this respect cannot be overestimated. Suffice it to say that to his fulfilment of the task, and the tactful assistance he has had from Major Knight (Indian Staff Corps), Captain Darley, Captain Boyd-Carpenter, and other members of his staff, a very large measure of the success of the force is due. In the first two months of 1900, 78 companies or 20 battalions had been raised, with a total strength of 550 officers and 10,371 men, to which the Volunteer Force contributed a large number. The force was organised under fixed rules and conditions, and save in the case of six Irish companies and one from Manchester, of four special corps (Sharpshooters, Roughriders, Duke of Cambridge's Own, and Paget's Horse), through the officers commanding Yeomanry regiments.

The work done by the first contingent of Imperial Yeomanry in South Africa at cavalry rates of pay is well known. Up to the close of 1900, 22 officers and 319 men had died, and of these 18 officers and 143 men were killed in action, while 50 officers and 347 men had been wounded.

By the end of 1900 the Imperial Yeomanry had sunk to 6,000, partly by sickness, and partly by a large number of resignations to take up civil or police posts in the new Colonies. These did much to unsettle the

remainder, coupled with the absence of any arrangements to relieve them at the end of twelve months in the field. Nor were the public declarations as to the approaching end of the war and the return of Lord Roberts and the C.I.V. without sinister effect. The necessity for a fresh contingent was, however, soon made apparent by Lord Kitchener

Curiously enough, the valuable experience, acquired in the hurried organisation of the first contingent, of working through colonels of Yeomanry was ignored, and open recruiting in the London streets resorted to. The extravagant rate of pay of 5s. a day brought masses of men, but among them a considerable number by no means desirable, and whose fulfilment of the physical, shooting, and riding standards was to say the least very superficially tested. The county territorial association, so valuable in the first levy, was also set aside, and men muddled together.

"Sons of the sheltered city, unmade, unhandled, unmeet,
Ye pushed them raw to the battle, as ye picked them raw from
the street."

The Secretary of State has said that he is carefully investigating the responsibility for this, and it is to be hoped also the way in which officers were appointed, many, unfortunately, quite unworthy of the position, and unfit for the duties.

The real responsibility lies, however, at the door of the War Office itself, and there it will remain unheeded, and the same error be repeated on the first opportunity. Is this not the case in some way this very hour?

The fault lies in never looking ahead, never preparing for contingencies, then doing everything in a rush and a scramble, without the slightest thought, and at extravagant cost.

It was so with the Imperial Yeomanry, with the City Imperial and other Volunteers, with the Colonial contingents. Settle to-day to raise the men, get them anyhow, anywhere, pack them into the train and on board ship, with any scratch officers and tell the Commander-in-Chief in the field that they are reinforcements, and he must be thankful. They arrive, have to be sorted out; the lame ducks and the consumptive, the blind and the tailors on horseback sent home, and the rest kept in a camp to be drilled, trained, and taught the elements of riding and fighting. Even Colonel Otter, with his splendid Canadian contingent, had to report:—"None had much idea of duties, interior economy, or discipline. I was astonished to find a very large number of the men ignorant of the first principles."

And here we are to-day wanting more men, and very insufficient preparation made to ensure that the reinforcements shall be worthy of the name. All suggestions, all offers to prepare and train men in case

the war should be prolonged, have been put aside. Truly a "penny wise, pound foolish" policy.

Small wonder that Lord Kitchener was not at first so appreciative of the 16,000 men of the second contingent of Imperial Yeomanry as he was intended to be, and little relished the privilege of having to teach them to ride and shoot, to stethoscope and examine them physically, when he wanted marksmen in the first line.

The high rate of pay which their acquirements seemed hardly to justify, also created much discontent in other branches of the Army, which found expression in many ways. But after the return of about 10 per cent. as inefficient, and of about the same number on physical grounds—at least 228 of whom should never, in the opinion of the Principal Medical Officer of the Imperial Yeomanry Hospitals, have been sent out—the remainder re-organised, and under carefully selected officers, have rendered, and are rendering, excellent service.

Indeed, the fact that over 30 officers and nearly 300 men have in eight months been killed in action, and 63 officers and over 600 men wounded, shows that the second contingent has had even harder fighting than the first. Up to the end of November, 1901, 13 officers and 350 men had also died of disease in their country's cause.

All the Regular officers who have been placed in charge of Yeomanry battalions now write in warm approval concerning them, for instance:—

Colonel Keir, R.H.A., *p.s.c.*, of the 1st Battalion, says: "My men are very good indeed."

Colonel Banon, *p.s.c.*, Shropshire L.I.: "I am more sanguine about the Regiment (17th Battalion) than I have ever been before."

Colonel von Donop, R.A.: "The Yeomanry are doing very well and are very keen."

Major Campbell, 9th Lancers: "Been doing excellent work. By judicious weeding they improved by leaps and bounds. Colonel Damant is always applying for more."

Colonel Hickie, *p.s.c.*, Royal Fusiliers: "I have been intimately acquainted with 18 regiments of Regulars and Irregulars, and would not change my Imperial Yeomanry Companies for an equal number of men from any corps in South Africa."

Colonel de Rougemont, D.S.O., R.A.: "They are (12th Battalion) extremely good and brave as lions."

These opinions are, I know, shared by Lord Kitchener, and with a little forethought and care none of those contrary views, which have given so much pain, would ever have had to be expressed.

The present strength of the Imperial Yeomanry in the field is about 9,000. The wastage from one cause and another is 1,000 a month. It is quite clear that the steps being taken to provide reinforcements

come none too soon. But whatever is decided, it is to be hoped that the matter will not be rushed, and unsuitable officers or men sent out. The camp and training school should be maintained, and only those who pass be drafted to the front. Above all things, it is essential in these matters connected with Militia, Yeomanry, and Volunteers, that the colonels of regiments, and those who understand the practical working of these Auxiliary forces, and have personal influence among them, should be consulted. If not, failure and confusion are absolutely inevitable.

There is another subject connected with the Imperial Yeomanry in South Africa at the present time, to which I must refer, and that is that preferential consideration should be given to them and other soldiers who have borne the heat and burden of the day in the organisation of the new Colonies. Lord Chesham has wisely decided that to obviate the disturbing influences attendant on the latter days of the first contingent, none can be allowed to take up civil posts until the end of the war. But the fear is that when that comes these posts will all be filled up, and those who have done yeoman service for the Empire left out in the cold. This should not be.

I must also add that above all things it is essential to keep faith absolutely with all Auxiliaries, and to settle up their accounts promptly. Owing to the failure to do this, and the neglect to provide the men with "small books," and to make proper arrangements as to pay, and to provide instruction in accounting, such as is now being done by Captain Bruce at Lord Chesham's headquarters, only 4 per cent. of the first contingent of Imperial Yeomanry have come forward for re-engagement, despite the settling of old scores in a manner now as reckless, as it was narrow-minded.

XXII.—REMOUNTS AND HORSE-MASTERSHIP.

Perhaps the most difficult subject connected with the war in South Africa is the question of remounts. The wastage of horseflesh is 15,000 a month at the very least, and fully that number of horses must be imported. The remount officers, under Colonel Birkbeck, have had a terribly hard and trying time. Such has been and is the demand that the wretched animals, after a long voyage, have in many cases to be slung on shore and trucked up country, with the six weeks' rest they should have, if they are to last at all, curtailed by five-sixths. There are remount depôts at all centres, but they are seldom able to retain their animals for any reasonable time for rest. Among the best of them is that near Bloemfontein, conducted on the most modern and scientific lines, under Veterinary-Captain Eassie.

This question of horseflesh affords proof of the paramount necessity of putting the Army Veterinary Department upon a sufficiently strong basis. It has now over 300,000 animals under its charge—a task far beyond the power of its numbers, although augmented by civil veterinary surgeons.

Among the serious problems connected with the future of South Africa, is the denuding of the country of all its horses. Nearly everything with four legs has been requisitioned or commandeered. And while the playing of polo and other games is a thing at all times to be encouraged in moderation, especially as, if there is not such outlet for the high spirits of youth, it is bound to take, as in foreign Armies, other and less desirable forms, care is necessary to prevent ponies being kept solely for such a purpose, so long as horseflesh is in such tremendous demand throughout the Army and the entire country.

It is stated on all hands that much progress has been made in horse-mastership, especially by the Regular Cavalry. But the recent Army Order, however late in the day, will do good. The poor horses are now exempted from being hung round about like Christmas-trees, or a subaltern straight from Bond Street, with every impossible and useless article. They are also walked sometimes, and relieved of the man on their backs whenever the opportunity offers. But the Colonials are learning less readily from the Boers, and hardly ever move except at a gallop, even when there is not the slightest occasion for hurry. Many of the horses have been taught—a matter of a few days—to stand with the reins over the head, on the Boer model, instead of being left in charge of No. 3, often the most awkward man of the sub-section, but on whom most depends in the matter of the safety of his comrades. The Army Order against the hogging of manes, except in case of disease, issued in the belief that the mane was given a horse to protect the back of the neck from the sun or other useful purpose, is, however, more honoured in the breach than in the observance; and many a mounted infantryman and other soldier does not get off when he might, because of the difficulty of mounting, rifle in hand, unless at least a mane lock is left. It is also a serious matter if a sudden order comes to men acting on foot "to your horses." The more active get on and are off. The less active, or one with a restive or bigger horse, or a loosely-girted saddle, has the greater difficulty. The King's Master-of-the-Horse has set his face against bearing reins with beneficial effect. If the Duke of Portland would go further, and put every horse with a docked tail, or hogged mane, out of competition at horse shows, he will do infinite service to dumb creation. It is awful to see the wretched, tailless, maneless animals suffering a fly-martyrdom.

XXIII.—THE ROYAL ARTILLERY.

Of all arms of the Service which have seen their most cherished maxims shattered by the war, the Royal Artillery, the most gallant, the most daring arm of the Service, is said to be an easy first.

“The distance at which the effect of fire can be observed, practically fixes the extreme range of useful artillery fire.”—(Official Manual, 1896, Infantry drill, Combined Tactics, Artillery Section, p. 125.)

“One gun is no gun,” and many other trite battery teachings—all gone and shattered to the winds by the rude teachings of the Boers.

“The Artillery in Natal” (Clowes & Sons) is a little book by Captain Holmes Wilson, R.A. Apart from giving an excellent general account of the operations before Ladysmith, it is full of useful hints by a practical Artillery adjutant, who went through all the toughest artillery work. I should not venture on such observations myself, but let him speak:—

“Field batteries were constantly exposed, without any attempt at concealment, in serried lines along the sky-line, exposed to the fire of long-range guns, to which they could not reply.”

“The enemy’s gun emplacements were strong and well arranged. Ours, even inside Ladysmith, gave the idea of having been hastily provided.”

“Single guns on the enemy’s side in scattered positions, that were rarely seen, and were concentrating their fire upon a single spot, prevented them being silenced. Guns should be used, when possible, ‘slimly’ in sections. Few, if any, practical experiments, had ever been carried out by our field batteries at home against targets under cover.”

“The Boer guns had always a happy knack of getting behind the cover of slopes or spurs, from which they could see without being seen. The British field batteries had one formation for every kind of fighting—and that was line at stated intervals, irrespective of the nature of the ground. They formed line, and advanced by brigade divisions.”

“Long Tom, at Vaal Krantz, was only visible for a few seconds. He was on a disappearing carriage, and could be seen going up and down. Against Long Tom our own artillery could do nothing. The principles upon which the enemy worked made it possible for him, with a weak artillery, to out-maneuvre and out-flank the British infantry supported by some sixty guns of all calibres. It enabled ten guns to baffle sixty.”

If this was the opinion of a battery officer, that of a “Linesman” corroborated it:—

“Our own magnificent ordnance might have been absent for all the good they did in stopping the Boer fire. Every Dutch gun was perfectly

concealed, and if 'spotted' was so quickly and skilfully removed, that never once did our shells touch them."

As to artifice¹ our gunners cannot have this laid to their charge. They

¹ The following deductions from the Boer side by the foreign officer already quoted are worthy of attention :—

1. Put men in front of hills so that they will not desire to run back over the crest, exposing themselves to fire. Then they remain lying where they are, retirement being difficult.
2. A hill is generally a disadvantage, otherwise it is only of use as cover for reserve ammunition, wagons, and horses.
3. The chief danger of a hill, or chain of hills, is that it offers a splendid target for artillery fire. Nothing is more tempting to bombard than a hill, a wood, or cluster of houses.
4. A hill is also unsuitable as an artillery position, as the guns lose their sweeping effect. High ground should only be selected for an artillery position when the enemy cannot be seen from any other.
5. Woods form the worst cover, as the shells crashing into them have a terrible effect upon the nerves. Occupy the edge of a wood, but keep out of the wood itself. The enemy is sure to squander his ammunition on the unoccupied wood.
6. Avoid bushes in battle. I observed that most casualties were to be found behind bushes, because they make a splendid target, and it is taken for granted that they are serving as cover.
7. Take the real, but avoid the apparent cover, such as ditches and natural risings in the ground, which do not offer a striking target.
8. There is too great a tendency to shoot always in the same direction, partly because of something supposed to have been seen there, partly because it takes time to change.
9. When the enemy fires persistently on any place, move from it, either forward or to right or left. The Boers did this and always with good effect. Often when we had fired we ran quickly for 200 yards, and then came a hail of shot exactly over the guns where there was no one left.
10. A man must learn to lie down, and to run if he is to manoeuvre successfully against modern rifles.
11. Avoid localities on which artillery fire is most effective, such as a wall, a farm, a tree. A shell striking them may kill a whole section, but if it strikes the ground does little damage, and as a rule does not burst. But troops in flight are excellent food for shell.
12. The first necessity is for the men to shoot well: the second to shoot well; the third to shoot well. Marksman ship must be cultivated by all possible means, and with this goes the necessity for judging distance correctly. Little is done in the finding of ranges. Theoretically every company has a range finder: what is that among a company spread out over a mile? The light, the formation of the ground, the time of the year, all have a great effect. "The English hit nothing—absolutely nothing." Although this latter comment is not accurate, the comparatively small losses of the Boers prove that it has too much foundation. The stage business of "fire" by word of command is only good at a military execution.

were heroic in their honesty of purpose—"the advance in line by brigade divisions as if on a great parade." An official memorandum had to be issued to warn them against being always taken in by the Boer burning a little black powder in an old and harmless piece to conceal the great smokeless gun raking our patient columns fore and aft from quite a different position.

Another question demands consideration, and that is the escort for field artillery. It is absurd to tie it to the slow pace of infantry, cruel also on the infantry to expect it to keep pace with six- or eight-horsed guns. The escort should be either mounted or conveyed on a travelling carriage, and its duty to help get a gun into a commanding position such as those taken up by the Boers, to build emplacements, and artificially to conceal the gun from view. The harness has been lightened and simplified. More may still be done in this direction, and also to reduce the number of men and horses used for the ammunition wagons.

Column commanders have had not a little worry with the two guns and a pom-pom usually assigned to them. In the first place the wheels make such a noise that secret night movements are almost impossible. In the second the Royal Artillery officer has often been slow to find position for a piece, and being very conservative in his notions and touchy of interference. Then the Boers always redouble in activity if there is a chance of capturing a gun, even though its possession worries them just as much. To such an extent is this so that the guns are now forbidden to go out with less than 400 men, or with fewer than eight horses apiece.

The twenty score cannon in South Africa are now, therefore, mainly employed as guns of position over store places and railway junctions, and a battery commander has to live on the line. For instance, one battery has a section at Colesberg, another at De Aar, the third at Beaufort West—a train journey of about twelve hours, say, from London to Edinburgh, from flank to flank.

The fuses, which at the beginning of the war were timed for 15 seconds or 3,000 yards, have now been increased to 22 to 25 seconds or almost 5,000 yards; and so the lessons taught may, it is hoped, be quickly applied, for if "it is doubtful whether trenches, such as the Boers had, can be seriously knocked about by the direct fire of even heavy guns," the moral effect of artillery, and especially of pom-poms and quick-firing guns, is certain. Although far less destructive than rifle fire, the best cavalry and infantry cannot stand for long in the open against well-directed shell unless on the move.

XXIV.—THE CAVALRY.

"Cavalry least serviceable" was, as already stated, the official appraisement of the three arms before the war. But how different the reality General Sir John French quickly showed! We are a wonderful race. Experience teaches us little. Our authorities do not read and do not believe reports unless they agree with their own pre-conceived and far-away notions. On 16th February, 1881, Sir George Pomeroy-Colley wrote from the slopes of Amajuba to Sir Evelyn Wood, "Cavalry has been my terrible want," and again, "I am not inclined to make another move until I have cavalry." Three days afterwards the gallant recipient of these words made a reconnaissance *with cavalry*, swam the Buffalo twice and covered 60 miles of ground. Nineteen years passed and Sir Evelyn Wood is Adjutant-General to the Forces. That fateful telegram goes over the Empire. Methuen lost the advantage he gained at Belmont and at Graspan, for he had not a horse to follow the retreating enemy. French was forbidden to take five regiments of horse out of Ladysmith, when he had but to sound "the gallop" on the open road. But, as Lord Rosebery said, "we shall muddle through." And we have pretty nearly.

It is questionable though to the highest authority on modern cavalry tactics—the general who is to have the training of the First Army Corps and command-in-chief our next expeditionary force—if we have not gone too far in converting our cavalry into mounted infantry, and depriving them of all power of charge with lance and sword. The work of the Royal Irish Lancers at Elandslaagte is one of the few real lessons we have been able to drive home in blood to the enemy. The way the Boers have realised the change on our part is only another proof of their astonishing *esprit de la guerre*. Men who have rarely been got to stand are now taking to charging on horseback clean up to our guns, and delivering a volley mounted at point-blank range, and we have now no lances to pin them to their ground, or harry their retreat. More than one instance of these new Dutch tactics has recently occurred—the attack near Bethel, upon the rear guard of the gallant and regretted Colonel Benson, was one, and its effect upon the infantry is not the less known by reason of sparing comment. The Dublin Fusiliers Mounted Infantry at Newcastle are being taught to charge with fixed bayonets mounted, but a long rifle wants two hands.

What the Boers have made perfectly clear is this, that in practical war fixed principles take a very secondary place to quick adaptation to the exigencies of a situation, and the drill book to rapid and intelligent action. Individualism must be encouraged. A Boer force melts away at

a signal, and each individual will rendezvous on a given date, 60 miles away, and find himself in food all the time. Could our men do this?

XXV.—THE INFANTRY.

If the demand was for cavalry and mounted men, it has now set in again for infantry—the patient, steady going, never complaining, cheerful infantry trekking on day after day, seeing little of the show, and not knowing what part they are playing in the great game, in the march and counter-march, the move and counter-move. Twenty-three battalions of them have been mounted and formed into eight corps. It is even probable that this source of supply might have been more extensively tapped than it has for the purpose, and mounted infantry thus obtained with more knowledge of the country, and of Boer tactics than fresh "Yeomanry" levies. That, however, is matter of opinion. Intelligence is essential in an effective mounted man. But mounted infantry however good cannot wholly replace cavalry. "Like a groom-gardener," says a distinguished mounted infantry general, "they are more suitable for small establishments."

Infantry, more infantry, at least 20,000, are now necessary, not only to relieve time-expired Militia battalions, Volunteer companies, and if possible old Reservists, but to man the fresh blockhouses now being erected.

The equipment of the infantry demands immediate revision. I said that no one can account for the possession of so much ammunition by the Boers. Whether it comes in through German territory on the west, or up Portuguese rivers on the east, is a moot point. Admiral Moore, the Naval Commander-in-Chief at Simons Town, where £5,000,000 of British money are being spent, and a mountain being toppled into the sea, though most ready to help in any possible way with ships or "the Handy Man" by land or sea, has been directed to refrain from stopping and searching vessels for contraband. The nature of the coasts, however, make the landing of large cargoes impossible. But it is certain that some ammunition has been picked up on our old camping grounds and along our line of march by the enemy. We are now giving a higher price for it to the native foragers than the Boers. Despite all the vigilance of column commanders the bandoliers and pouches supplied to our men are rather sieves for ammunition than safe store places. The report of the officer commanding the Royal Canadian Regiment to his Government is very apt.

"The bandoliers issued to us did not prove equal to the occasion as the divisions soon stretched, allowing the cartridges to fall out, and

the loss was constant and out of all proportion; while the rows of brass heads in the front made a distinct and easy mark for the enemy's fire."

In practice the web bandolier was even worse, and cartridges quietly roll out of it, lying on the ground beside the bivouac, the trooper not noticing the deficiency in the hurry of the dark reveille and start before dawn.

And as for the pouches, the less said the better. It is absolutely waste of money to spend more money on them. Nor is the valise ever worn in the field. It was left, as a rule, at Cape Town or point of landing. Greatcoats have nearly always to be carried for the men, and the absence of these upsets all the complicated straps of the Slade-Wallace equipment, requiring a valet to adjust them. The Coldstream Guards and some other corps have found that the haversack rides more comfortably on the back than dangling at the side and bumping against a man's legs.

But what is most necessary of all is the immediate adoption of a clip magazine for the Lee-Metford, as also of a short rifle, sighted for 3,000 to 4,000 yards, for cavalry and mounted infantry. The hinged stock designed by Mr. Rimington Wilson may in the meantime make the long rifle less troublesome to the indifferent rider. For the officers and others also a better revolver is essential, besides practice with it. That just brought out by the Vickers-Maxim Company has many merits—absolute safety, clip loading in the dark, no escape of gas, or kick, and long range. I took the first to South Africa, and experienced officers preferred it to the Mauser.

But arms, however perfected, will be useless unless not only our soldiers, but the nation itself (as Lord Salisbury urges), is taught to shoot, from the cadet corps at schools—as suggested by the Prince of Wales on the example of Australia, and urged by the Head Master at Eton—to the village rifle club.

The Boers, pious though they were, saw no desecration in combining practice with religious feast days and practices. We may well do the same. Rifle shooting cannot be worse than Sunday bicycling or motor-car driving. The latter is for individual pleasure, the other a national duty. Although the campaign has not been "the buck shoot" the Boers were led to expect, 5,000 Britons have died before the Mauser to prove that we are woefully careless and heedless of the country's safety in this respect.

XXVI.—THE STAFF AND INTELLIGENCE DEPARTMENT.

There are now in South Africa 500 colonels on the Staff, deputy adjutant-generals, deputy assistant-adjutant-generals, brigade majors,

aides-de-camp, provost marshals, assistant provost marshals, field intelligence officers, miscellaneous officers on the Staff, and special service officers, all recognised and named in the Army List. In addition, there are at the very least a thousand more "red tags" appointed to various nominal posts in deference to the frequent letter:—"If you can, my dear General, give a helping hand to Augustus. He is gallant, galloping, and gentle-blooded." The "red lappets" are all very good fellows. But the "brilliant staff" of the brigadier contrasts strongly with the setting of a "Kaiserliche Parade" at Berlin, or even of an Imperial display at St. Petersburg. There the cocked hats are two at the most per brigade, and enjoined to let the colonels alone, and not hurry-scurry them with contradictory orders and injunctions. Lord Kitchener sets an example. He has a couple of silent officers in his secret, special train, and four at his intimate table. But apart from war there is the preparation for war. It is absolutely certain that until we have a General Staff, carefully selected, and preparing every detail for every possible campaign, the British Army will never be ready. War in South Africa has been most probable for twenty years past. It was absolutely certain for at least four years before it actually occurred. But there was practically no preparation for it. Little effort could have been made to obtain correct information. At least it was singularly inaccurate. Every general makes this complaint. Three weeks after the declaration of war, Lord Wolseley said:—"We have found that the enemy are much more numerous and powerful than we expected."

And of the time (10th January, 1900), when Lord Roberts landed at Cape Town, Colonel Henderson, Director of Intelligence on the Head-Quarter Staff, writes:—"There was no plan of campaign, and there was hardly any information regarding the physical features of the country to be invaded." The officers sent to reconnoitre, after affairs had assumed a very threatening aspect, obtained so little information, or so much that was inaccurate, that it was worse than useless. Most of them were seen through all the time, and how could it be otherwise? No effort had been made to get men to learn Dutch (with Holland twelve hours off), and some of "the apostles," as they were called, resorted to the most strange proceedings. One, a *soi-disant* mining prospector, travelled with four horses, and talked about pennyweights to the ton in a coal mine! Similarly, but for Giroard, nothing would have been provided as to the railways; and although it was perfectly certain that a large number of commandants would be necessary in occupied places, not the slightest attempt was made to obtain good men, or to educate them in their duties. They had almost to be advertised for among the captains of regiments at home, or picked up casually, and not always with such good luck as in the case of Colonel Holden, Commandant

of the District of Colesberg, and the gallant Secretary of this Institution. Again, Staff officers were pitchforked at generals, with little or no previous knowledge of their duties, and they made acquaintance on board ship, or through the intermediary of noble relatives, or parties even more interested in the success of youth.

After two years of war, things are now better, and the Intelligence Department is, with Colonial help, well and ably manned. But it is no small wonder that information sometimes gets out when a junior officer in charge of a small detachment is magnified into an "O.C. Troops," and talks of "my intelligence officer" as of "my cook." Indeed the numbers and confidence of "my intelligence officers," and the number of chiefs they are under, are startling to one who learnt, during arduous years at Scotland Yard, the necessity of concentrating information if it is not to flow into wrong channels. Especially dangerous is the attribution often assigned to them of filling the void of a morning paper to their friends and acquaintances.

All this is less the fault of anyone in particular, than of our amazing happy-go-lucky system, in which the most optimistic view always predominates everything.

It was not the German soldier who conquered Austria in 1866, and France in 1870. It was the German General Staff at Berlin; not frittering away its time with administrative duties, with the number and shape of buttons, the colours of plumes, and the devising of caps; but steadily, silently, persistently, surely, with sufficient funds, preparing for the war, which was possible, if not probable. It is doing so now, under the personal direction of His Imperial Majesty William II., and everything will be ready when needed. If Sir William Nicholson has a free hand, I dare say it will be so with us. But as yet there is no sign of a General Staff forming upon the mazy horizon in Pall Mall.

XXVII.—THE ARMY POST OFFICE.

It is pleasant to conclude this brief, but I hope respectful, survey of the military departments in South Africa with a word of unqualified admiration, and that is for the working of the Field Army Post Office, manned by Colonel Treble and the Post Office Volunteers. It is as perfect as it possibly can be, and hardly a letter, a newspaper, or a parcel—in 50 tons of mail matter a week—fails to reach the one among 200,000 men, in a thousand different units, quickly moving from one unknown and inaccessible place to another, over an enormous area.

The Army Pay Department also pursues a difficult and thankless task with much success. But if it can do something to simplify accounts, to reduce the number of special allowances, to do away with harassing

reductions—"for a helmet, ordered by authority," "for a shirt to replace rags," captains of batteries, squadrons, and companies, will bless the reformer.

XXVIII.—THE COST OF THE WAR.

The cost of the war has already exceeded £200,000,000, and it is probable that a further sum of at least £100,000,000 will have to be directly or indirectly expended in connection therewith.

All will remember the speech of Sir William Harcourt at the Mansion House, in honour of the victor of Khartoum, and his financial powers. Lord Kitchener was described, not only in terms befitting that great vindication of British honour, but also as being a "Chancellor of the Exchequer." The Commander-in-Chief in South Africa is living up to that eulogium. Had his lot fallen to civil life, he would have been at the head of Armstrong's or Vickers', or some great business. He looks personally, assisted by Major Armstrong as financial adviser, into every detail of expenditure, and reduces and curbs it in every possible way. In the past few days, for instance, the price of landing horses has been lowered from 10s. a head to 1s. 9d.; and contractors, who were making a pile out of the Army, on the easy assumption that £100,000, more or less, did not matter when the British taxpayer was spending so many millions, are seeing their old agreements torn up, and the Army setting to the task itself, unless a more reasonable view is taken.

The expenses in South Africa amount in round numbers to about £2,500,000 a month, thus distributed :—

	£
Pay and Allowances	750,000
Provisions	1,000,000
Railways and Transport	750,000

The remainder of the expenditure of £6,000,000 a month is spent at home upon transport, clothing, arms and munitions of war, horses, etc.

If this latter expenditure was placed under the authority of Lord Kitchener, and regulated by an officer responsible to him, it is highly probable that it could be materially reduced and brought down to a little over £4,000,000 a month. For instance, the transport service could be better regulated with great advantage, and the arrival of ships in sequence arranged for instead of in a bunch, entailing heavy demurrage charges.

It may be too light-hearted a way to look at the war now as a national institution, for which Chancellors of the Exchequer will have to make a regular provision for the next five years. But I am personally convinced that the credit balance will not be large from an annual vote of £50,000,000, and should be most glad if Lord Kitchener would take a contract on these terms. One of the conditions would have, however, to be that neither the command-in-chief in India, nor any post at home,

should remove him from South Africa, until the last prisoner of war had been freed and converted into a peaceful citizen of His Majesty.

It may be asked how much of this vast sum of from £350,000,000 to £400,000,000, which I put down as the ultimate cost of the war, will be recoverable from the new Colonies. So far as the Orange River Colony is concerned, there are already indications that under the extremely able and tactful administration of Major Goold-Adams, assisted by Mr. Wilson as Colonial Secretary, it will pay its way. Indeed, the cash balances are already satisfactory. But for many years there can be no substantial margin, and the repair of the terrible sacrifice of animal life, of which it has been the theatre in the last 30 months, will be long and costly.

Then, as to the Transvaal, we must "not," says the highest authority, "load the camel so as to prevent his getting up again." The industrial camel is now on his knees throughout the conquered territories, and there he will remain if he is overweighted from the start. Few of the mines can make much contribution for some years. At present about 15 per cent. of the stamps are running. By March, if all goes well, it may be one-quarter. But two years will elapse, under the most favourable conditions, and six months after the removal of martial law, before the Rand resumes its full output, and it will not do it in this period if the short-sighted at home weigh them down with an oppressive tax.

The Boers did practically no damage to the mines, nor indeed to any property within the Transvaal border. Whether this was due to their care for their own, or to the rapidity of Lord Roberts' movements, or to the large foreign interests involved, or to divided counsels, including the influence of General Botha and Dr. Krause, will always remain doubtful. But there is the fact. Much of the machinery and mining plant have, however, suffered by non-use, water, and weather, and considerable stores have to be got up from the coast before full work can be resumed, and a beginning is made to pay off accumulated debts and charges. The native labour question will also be difficult so long as warlike operations continue, and the Kaffir can earn larger wages above ground than the mines can afford. An idea used to prevail that only Portuguese "boys" were good for the mines, but I succeeded in getting this officially dispelled by the manager of the Robinson and the President of the Chamber of Mines.

The best solution of the financial problem would probably be to assign a large proportion of the gross revenue, say three-fourths over and above a certain sum, perhaps £5,000,000, as an indemnity to the mother country for the expenses of the war.

The Customs' Receipts of Mr. Honey, as Comptroller of Customs, will go a long way to meeting the ordinary expenses of the Government,

with such a reasonable preference to British goods, as Lord Milner is most ready to concede, and which will in itself go a long way towards reimbursing the charges of the war.

XXIX.—WHY THE WAR CONTINUES.

The continuance of the war is one of those amazing things impossible of definite explanation. So far as Commandant-General Louis Botha was authorised to treat on the part of those still in arms against His Majesty, peace was almost in our hands last spring. The stumbling-block was the amnesty for the first Cape and Natal rebels, for those who without the slightest reason or provocation had, to the number of some 15,000, joined the enemy. Our past history points, unfortunately, to the belief among those concerned that the clash of political parties under constitutional government, makes amnesty within a limited time almost a certainty. It is even confidently expected at the Coronation. But in the well-grounded opinions of those most competent to judge, and on whom the responsibility rests, such a concession to disloyalty would have provoked a storm among the loyal, who have suffered and endured so much, that the peace would only have been nominal. The Commandant-General, therefore, by his address to the burghers from Ermelo, on 15th March, 1901, rejected the generous terms conveyed to him by Lord Kitchener a week previously. They were well defined by the Peace Committee—whose unfortunate secretary, Meyer de Kock, was murdered by his countrymen for his efforts in that direction—as “a well-meant offer from a powerful man (Lord Kitchener), who is sure of his case, and a person who is willing to do everything to restore peace and prevent further bloodshed and destruction.”

This decision was probably largely influenced by the opinion of Commandant C. R. De Wet, made public by his proclamation of 1st April, 1901, to the burghers of the Orange :—

“If I and our Government were so foolish as to accept the proposals of Lord Kitchener, I am convinced that the great majority of our people, if not all who are now fighting, would not agree.”

The notice, signed by Messrs. Schalk Burgher and Steyn as the nominal Presidents, on 20th June, 1901, with winter just coming, “that no peace conditions can be accepted by which our independence and national existence, or the interests of our colonial brothers, shall be the price paid,” would appear to confirm this decision, and the more clearly it is recognised by the British people the better.

When a mediator from the Dutch Reformed Church met Messrs Steyn and De Wet in August they were absolutely convinced :—

1. That the British War Funds were exhausted and that no further supplies would be voted by Parliament.
2. That a large section of the British people were in favour of the Boer cause and opposed to the war and its continuance.
3. That the British Army, according to the London newspapers, was in a lamentable condition, large numbers insisting on being sent home, and the supply of fresh troops exhausted (it is to be noted that he held in his hands the figures of those leaving South Africa, but not of those arriving).
4. That Cape Colony was showing more practical help to the Boer cause than at any previous period.
5. That foreign intervention or complications were certain.

The Orange commandant gave expression to these views with an excitable impatience which precluded all idea of his listening to reason. That he continues in the same frame of mind is pretty certain, and to such an extent is this so, that the commandoes now sometimes object to his impetuous presence in the field, as drawing upon them an altogether too desperate an attention.

That it should be shared by Mr. Steyn, an educated and broad-minded man, with considerable family and other matters at stake, is strange, and the advices from Europe of Commandant-General Botha must show how unfounded they are.

It must also be admitted that there are two factors which tend to keep the enemy still in the field. The one is the destruction of the farms, crops, and stocks. The other, the bringing in of their wives and families. The former, however lamentable, was rendered necessary by the support and sustenance they afforded to the enemy. The latter was due to the failure of Lord Kitchener's proposals to Commandant-General Botha, that the surrendered burghers and their families should not be molested. His reply was emphatic, that as the law of the late Republics compelled every man to serve, and forbade his surrendering his arms or taking the oath of neutrality, he would bring those upon whom he could lay his hands to trial and punishment, and that their women and children must also suffer.

These two causes—destruction and concentration—have, therefore, contributed greatly to alter the character of the burgher on commando. He has always been accustomed up to the present—during earlier wars and the antecedent phases of the present campaign—to serve for a time and then return to his farm and relatives for a few weeks, and again to go under arms. He has now no farm to go to, no crops to till, or cattle to see after, even if travel was possible. He has also been relieved by us of all anxiety as to his family, and it is doubtful if absence is making

the heart grow fonder, owing to a variety of causes not necessary to specify.

But apart from this conversion of the casual, though skilful, campaigner into a regular soldier, there is another influence operating to keep these guerilla bands in the mountains. This also is a matter of our manufacture, but not on account of the stern exigency of war, not on humanitarian grounds, but out of pure thoughtless malevolence on the part of the enemies of their country at home. It must not be assumed that the Boers in the field are ignorant of what is passing in England, even although they are unable to gauge its proportion. There is the clearest evidence that, by one means or another, mainly Kaffir runners between their adherents in Cape Colony and from district to district, they receive newspaper extracts and reports of meetings, articles, and letters favourable to their cause. Great the responsibility of those who, from pure wantonness or from motives of misguided sentimentalism, encourage the hopeless resistance of a small body, and thus entail pain, suffering, and ruin upon hundreds of innocent victims, and sacrifice the blood and treasure of their countrymen.

I have it on the highest authority that the letter of a well-known politician, written "by his own fireside," on the sinister date of 5th November, cannot fail to prolong the war for at least three months, and to its effect must be assigned the responsibility for the tears and anguish, the suffering and affliction it will bring in its train.

"Let me record"—he writes—"what were the opinions of the Duke of Wellington on guerilla warfare. On 9th August, 1809, that British general said:—

"The guerillas should be employed on the enemy's communications. The plan of operations I should recommend for the Spanish nation is one generally of defence. They should avoid general actions, but should take advantage of the strong posts in their country to defend themselves and harass the enemy."

This advice culled from history was, on being telegraphed to South Africa, sent from commando to commando to encourage further resistance.

It must also be conceded that the Surrender Proclamation has had no effect. Its very terms were used to show the burghers under Botha, Delarey, De Wet, Fouché, and others, that they would be transported if they surrendered, and their farms confiscated. As every Boer, although individually a courteous, hospitable, friendly man, thinks himself a leader, and the rank of field cornet has been practically suppressed, it was read to apply to every individual in the field.

Except for the signature to this proclamation, Lord Kitchener was not wholly responsible. It is also fatal to issue notices and not act upon them at once if the stated conditions are not complied with. To do

otherwise is antagonistic to the success of any future announcements. Not one single farm of a burgher or commando has yet been put up to forced sale, as should have been done within a few days of 15th September, and sentence of banishment has been discontinued.

Such then are the causes operating to prevent a surrender and to deprive it of motive and advantage. To them may perhaps be added the reiterated use of the word "unconditional." The Boer has an essentially legal mind, and delights in quibbling upon words. The "unconditional surrender" of many has been construed into an absolution from all conditions; and, therefore they have easily reconciled taking up arms again to their consciences—although it is probable that "conditions" would not have troubled them much as a whole.

XXX.—POSSIBLE CONDITIONS OF PEACE.

There are some who advocate—and among them high authority among the loyal Dutch in Cape Colony, of whom the Right Honourable Sir Henry de Villiers, Chief Justice, is a leading representative—the despatch of a Special Commissioner of high rank (Lord Rosebery is suggested) to South Africa, to make known to the Boers conditions of peace and surrender. This, however, would appear hardly necessary. Such an appointment would certainly be interpreted as a weakening of the authority of the High Commissioner and Commander-in-Chief, and imply some falling back from the confidence in which they are held by His Majesty's Government and the Imperial Legislature.

Moreover Commandant-General Botha and Commandants De Wet and Delarey, and others know perfectly the terms upon which they can come in and put an end to the present ruinous condition of affairs. Although I have no authority whatever to define them, and no information on the subject, I should take them to be :—

1. Amnesty in the Transvaal and Orange River Colony for all *bonâ fide* acts of war.
2. Freedom to rebels from Cape Colony and Natal to remain in the new Colonies, and to come under the same conditions whilst therein, as surrendered burghers.
3. Dissolution as speedily as possible of the camps of concentration.
4. Return in due course and as soon as practicable of the prisoners of war to South Africa, who desire it.
5. Integrity of church property, public trusts, and orphan fund.
6. Assistance in the re-erection, equipment, and furnishing of farms, the placing of fences, and in replanting and

restocking; the farmers in each locality electing a representative to assist a civil and expert Commissioner in the matter.

7. The issuing of rations and necessaries of life, pending resettlement.
8. The immediate establishment of a High Court of Justice under the presidency of the Hon. Sir James Rose-Innes, K.C., Attorney-General of Cape Colony, and the Hon. Sir Richard Solomon, K.C., as Attorney-General, with liberty to give evidence, if desired, in Dutch.
9. Immediate establishment of Free Education—all Bible instruction to be by Ministers of the Dutch Church, and in their language if so desired.
10. No special War Tax to be levied.
11. No one to be sent beyond the seas who voluntarily surrenders with his rifle, etc.
12. No confiscation of the property of any person voluntarily surrendering.
13. Equal justice for all persons.
14. Admission to the Civil Service and Public Works of the Colonies without distinction of race.
15. The addition of an unofficial element to the Governor's Council as soon as possible.
16. The seat of Government for the Orange Colony to be Bloemfontein, and at Pretoria for the Transvaal.

It is open at any time to Commandant-General Botha or any Commandant in charge of a commando to open negotiations at any moment upon these or any other lines, or to submit any further suggestions for the establishment of peace which occurs to them, or to ask for an official definition of the views of His Majesty's Government on any point.

The recent enormous majority obtained by His Majesty's Government in the House of Commons must prove to everyone that Great Britain is determined to bring the war to a conclusion in a matter satisfactory to ourselves, however long it takes, and cost what it may in men or money. At the same time, no one would desire to press in any way harshly upon so worthy a foe, and it will be the aim of every loyal patriot in South Africa, when once the struggle is over, to smooth away race distinction and animosities.

XXXI.—THE CAMPS OF CONCENTRATION.

There are about 130,000 women, children, old men, and cripples in the Boer camps of concentration, with a small proportion of young men, many of whom fare badly at the tongues of their vindictive female relatives. I have already mentioned the circumstances which led to the formation of these camps—a feeling of humanity and kindness on the part of Lord Kitchener. It has been admittedly a mistake, as was also the leniency of his predecessor to the first, or Sunnyside, rebels. It is easy to be wise after the event; and if the heart sometimes leads the head astray, the fault is on the right side in this era of civilisation. The bringing in of the women and children, who would otherwise have starved upon the veldt, has had and has an undoubted tendency to prolong the war.

One of the highest officials in the late Republics, whose loyal services towards the pacification of the Colonies have been warmly recognised by the military authorities, writes to me :—

“ I do think it would have been better to have left the people in the occupation of their farms, where they could foresee their own needs and have endeavoured to provide for their subsistence, instead of cooping them up together to brood over their present sufferings, and to condole with each other over the measures meted out to them and the future of destitution before them, tending to eradicate the confidence which they commenced to feel, and to perpetuate a hatred which will ever seek to undermine and destroy the future peace of these Colonies.”

But it is impossible now to go back, and turn these helpless persons adrift. They are not kept under any compulsion. They can go away if they will. There are neither sentries nor barriers, save such as are necessary to prevent the spread of infectious disease (scarlet fever, diphtheria, measles, and enteric), and the regulation as far as practicable of morality. “ For a considerable time now we have had no desertions, and everyone seems to be contented and reconciled,” Mr. Schickdling writes to me from Norval’s Pont, himself a burgher, who surrendered last January, and an honourable man. Another writes from Merebank : “ The treatment in the camp here is grand.” The report of the Committee of Ladies, appointed under Mrs. Fawcett and Lady Knox, to visit these camps, will be found to corroborate the opinion formed after visiting the principal ones, that nothing is omitted by Sir John Maxwell and Captain O’Brien, to mitigate the discomfort, and to provide so far as pains, attention, and money can do—they cost £3,000,000 or more a year—for all reasonable comfort and well-being. Good conduct, many smiling faces, and grateful expressions are proof of this, and out of evil may come good. Under no other circumstances could so widespread a commencement be made, as that inaugurated by Mr. Sergeant and Mr. Russell, the Directors

of Public Education in the new Colonies, to teach new and better ideas. Attendance at the school tents is voluntary. But the crowded classes learning English—over 40,000 boys and girls—by the most attractive and modern methods, and the aptitude of the pupils, are full of good augury for the future.

A dark side to the camps has been the high ratio of infant mortality in an epidemic of measles and haemorrhagic pneumonia. But the presence of the lady doctors on the Commission, is proof that this state of affairs (by some stated to be little above normal) was due in no sense to lack of humane precaution.

Indeed, the organisation of the camps, and the enormous pains taken by all concerned to make life in them as happy and comfortable as possible at the expense of the British taxpayer, are in strong contrast to the comparative neglect of the families of the loyal refugees from Johannesburg and elsewhere. They were, it must be remembered, put over the border by the enemy at the outbreak of the war, under circumstances of great hardship and cruelty, and left to subsist on the dwindling resources of private philanthropy, in ill-ordered and scarcely weatherproof camps and tin shelters.

XXXII.—THE NATIVES.

We are reaping assuredly in South Africa the reward of the righteous. It was our emancipation of the slaves and our policy with regard to the natives which did more than anything else to implant hatred and hostility to British rule on the part of the Boers. It led to their Great Trek of 1834, and to their settlement of the distant territories north of the Orange and the Vaal. All homage to the courage and the endurance of those "vortrekkers." Through the barren, waterless, roadless wastes of the Karoo, fighting every day, laagering every night, they pushed on with their women, children, and cattle towards the Great North Land. There they waged merciless war on the native, and until yesterday governed him with "rods and scorpions."

Had we yielded to the temptation of the prayer of the native for arms, the Boer race would to-day have been wiped out of existence. Basuto and Zulu, Kaffir and Swazi were dying for the chance of revenge for the bullet and the sjambok. But guided by wise counsellors, Sir Godfrey Langden, and others, His Majesty's Government said this is a white man's quarrel, we will not let the native taste blood so far as we can help it.

But none the less the natives are on our side from Cape Agulhas to the Zambesi—although some have under compulsion or for gain served the Boers, carried their messages, and dug their trenches for them. Such is the view of those most competent to judge; and although it may be

allowed that no white man can fully fathom the working of the native mind in its tribal ramifications, there appears to be more to warrant it than the vague alarm of native trouble entertained by others. It is also confirmed by the report of Bishop Coppin, of the American (coloured) Methodist Episcopal Church of Philadelphia, sent expressly to make inquiry on the subject, and found a church if the soil was suitable. He would be likely to obtain the correct view, and he has no hesitation in coming to the conclusion that the great mass of the natives, and the whole of the coloured people, as in the United States, recognise the liberality and justice towards them of the British, and what all coloured races owe to us from the time of Wilberforce for their present position. In this connection the veneration for Her late Most Gracious Majesty ("Victoria our great mother") is very discernible. Nor is the British prestige small—"the English can conquer everything but death," is the maxim of the Kaffir kraal.

No doubt the great prosperity of the South African natives, the high wages they are now earning (15s. or 27s. a week at Port Elizabeth), and the unceasing demand for more and more men, coupled with their power of working almost without a break, will bring social, if not political, difficulties in their train. But these will be capable of easy adjustment, for already the suffrage has been conceded under certain conditions of property, residence, and education, in Cape Colony and Natal.

XXXIII.—WHEN THE WAR WILL END?

This is the question repeated thousands of times a day throughout South Africa, and throughout the world. The answer varies according to the *genus loci*. The officer who sees all quiet within his immediate locality, and knowing little or nothing beyond it, frames his answer on the basis of his yearning for home. In a more disturbed district, with columns coming in, sniped at all the way, with the outlying piquet marking the boundary of the unescorted ride, the answer is different. At Head-Quarters the calculation of addition and subtraction in the office of the courteous and hard-worked Military Secretary, Colonel Hamilton, gives hopes that if "bags" continue at their present rate of progression, a few months, and certainly the advent of the frosts of July, with fresh blockhouses limiting the area of activity, will make a very material difference. It is possible that a sudden *coup* or friendly council might have widespread effect. But the only way to bring the war to a close is to make every preparation to continue it without the slightest intermission. It is no use Pall Mall or Downing Street cabling to ask if this or that is necessary, if this or that can be dispensed with. They may be sure that money spent in preparing men at home will be well laid out.

They may be sure that any superfluous horses, mules, oxen, steam-launches, lighters, corrugated iron, barbed wire, grain, or stores, will find a ready and enhanced market at the peace, should it not be required. But no one not having the gift of prophecy can say when the war will end. Indeed, as Lord Milner observed, "in a formal sense, it may never be over." The probability is that the last shot will be fired in Cape Colony. In any case the problems in that wide and troubled area before Sir Walter Hely-Hutchinson and his Government, are even more complicated than in the new Colonies. There is a serious absence of men in statecraft, owing to the unwillingness on the part of members of the Progressive or British party to enter the political arena. The transfer, moreover, of Sir James Rose-Innes and of Sir Richard Solomon to high legal office in the Transvaal, deprives the parent Colony of two most capable men.

XXXIV.—AFTER THE WAR.

It must be candidly admitted that the devastation of the country, the collection or destruction of all cattle, sheep, and horses, has greatly aggravated the difficult problem of the future settlement of the country. It was, unfortunately, rendered necessary by the action on the part of the enemy, described in Lord Roberts' communication to Commandant De Wet, on 3rd August, 1900 :—

"Many of my soldiers have been shot from farmhouses, over which the white flag has been flying, the railway and telegraph lines have been cut, and trains wrecked."

And again to Commandant-General Botha, on 7th September, 1900 :—

"The measures which I am compelled to adopt are those which the customs of war prescribe as being applicable to such cases. They are ruinous to the country, and entail endless suffering."

Confirming the letter of 2nd September, 1900, the Field-Marshal wrote :—

"The orders I have issued are, that the farm nearest the scene of any attempt to injure the line or wreck a train is to be burnt, and all farms within a radius of 10 miles are to be completely cleared of all their stock, supplies, etc."

The Boer Commandant-General's refusal to let peaceable burghers and their families alone, rendered necessary the extension of "these exceptional methods which civilised nations have at all times found it obligatory to use under like circumstances" (Field-Marshal Lord Roberts, 22nd October, 1900), if the war was ever to be finished, and the enemy not derive continually fresh supplies and ever-ready shelter for his operations.

It may well be that insufficient discrimination was exercised by officers carrying out this work, between the burghers who were quietly occupying their farms, and loyally complying with the terms of the Proclamation, and those who by suspicious conduct, contrary to their neutrality, had laid themselves open to penalty. But the materials they had to work upon were meagre for decision, and it must unfortunately happen in war as in peace that the innocent must sometimes suffer with the guilty.

What, however, is clear is that the work of reconstruction will be long, arduous, and costly, and that the re-erection of buildings, the repair of fences (the absence of firewood in the country has led to the complete destruction of all posts and standards), and the restocking will have to be done by a Commission in each Colony, upon which some Dutch representation will be useful, and cost from £3,000,000 to £5,000,000.

Coupled with this question is the exceedingly intricate one of the return of 35,000 prisoners, and who, before the end of the war, will be augmented to over 40,000. Of course none will be allowed to return who do not take the oath of allegiance, and as Major Poore, the Provost Marshal, recommends, only in classes of suitability and allegiance. But to every prisoner I would offer the option of seeking a new home in a country other than South Africa, and afford free conveyance thereto by sea to himself and all his family, together with a capital of £200 for an adult male, and £50 for every son over twelve years of age.

What the Transvaal is capable of as regards mineral production, it is impossible to say. The Rand is estimated to contain three thousand millions sterling worth of gold at the very least. Besides this, and to be capable of an annual output of from £15,000,000 to £20,000,000, there is gold in many other districts around Pretoria, Barberton, and elsewhere, the fringe of which has not yet been tapped. In addition there are great coal deposits, and it is thought by many competent to judge that the production of iron ore will prove even more valuable than the gold, and completely revolutionise that industry throughout the world.

All this belongs in large measure, it is true, to the realms of speculation. But what is clear and certain is the agricultural, fruit-producing, and stock-rearing prospect. There are certain factors to contend against—drought, hail, want of water, locusts, rinderpest, horse sickness, red water, and other epidemics. This, however, is the case in all the most fertile and undeveloped countries—Australia, Argentina, etc. Australians and New Zealanders see the future before South Africa, and the advantages offered by native labour, and do not propose to be behindhand in taking advantage of them. The pity is that so comparatively few of our own soldiers seem at present inclined or able to view the matter in the

same light; despite the valuable facts made public by Mr. Arnold-Forster's Lands Settlement Commission. The probability, however, is that if a free passage to desirable immigrants and their families, with some loan addition to capital, is given within twelve months of their return to England, after the conclusion of the war, many will take advantage of it. But all want to come home first. It is certain that the new Colonies can absorb any number of immigrants, and that the steady, the persevering, and the sober are, with reasonable assistance, bound to get on.

XXXV.—THE MILITARY OCCUPATION AND THE SOUTH AFRICAN CONSTABULARY.

A last word is necessary as to the military occupation which will be necessary to prevent a recrudescence of hostilities, and to ensure that the requisite protection shall be afforded in the settled portions of the country to the well disposed. It cannot be too strongly impressed upon the people of Great Britain that to the absence of this protection for want of men, and the consequent compulsion of burghers who had surrendered to break their neutrality, is entirely due the interruption of the submission south of Bloemfontein, in the autumn of 1900. We must not make the same mistake again, for as surely as we do there will be a further outbreak, unsettling men's minds and hindering the development of the country. However costly it may be, more than ample precaution will be cheap in comparison.

"It is curious how completely deceived all those who were supposed to be the most conversant with Dutch ideas and character have been."

Thus wrote the unfortunate Colley, on New Year's Day, 1881, and we might indeed write the same to-day, only, alas, the fresh realisation of the fact has cost us hundreds of lives and millions of money. We must not be misled again, however willing, into a false belief that after this war the Boers are going quietly to accept our rule. One, who in the interests of official history, has had exceptional opportunity of forming an opinion, is impressed with the great bitterness of the people, and says that prisoners and women openly declare they will rise on the first opportunity. Sir Owen Lanyon, Administrator of the Transvaal, just before 1881, "felt no anxiety whatever, for the Boers had never been so quiet and settled"!

We won South Africa by lawful purchase, after occupying it for the Dutch to prevent its seizure by the French. We have saved it; by the sword and by the rifle alone shall we keep it in this generation. In time to come, South Africa may be as loyal as Australia or Canada, but that time few now of my age can hope to see. What we have to do is to see that resistance shall neither be well armed nor effective.

This we cannot ensure, unless, for at least five years, a force of not less than 100,000 men is retained in South Africa. That will be all too small. A smaller body will be utterly lost, and even from that number not more than 60,000 will be available for operations. Pretoria, Johannesburg, Bloemfontein, Barberton, Harrismith, Standerton, Klerksdorp, Mafeking, will have to be strongly garrisoned, and a central camp fixed at some railway centre—such as Naauwpoort, or on the grass lands around Colesberg—ready to move in any direction with not fewer than 20,000 mounted men. Preparations, solid preparations with bricks and mortar, for this begun at once will show that we are not going to give up what we have won at such great cost.

I am aware that this estimate of the force required is in excess of that generally given. But it is one at which I have arrived, not of course on my own calculation, but by taking the views of the authorities in the various districts, weighing all considerations, and honestly endeavouring to steer a middle course between optimism and pessimism. There is no use in attempting to hide the fact. What has irritated the public in this war, is the way in which they have been repeatedly misled as to the true course of events. If in the result pacification comes sooner than expected, no taxpayer will reproach the Government for the taking of excessive precautions, and all will understand that "forewarned is forearmed." The country, as a whole, is not yet in our possession—the Boers say we appoint the magistrates in the towns, they the landrosts in the country. This is, of course, an exaggeration, but the bringing back to the barren veldt of 40,000 men fresh from long banishment is a proceeding demanding an excess of precaution, rather than that excessive confidence which has proved so treacherous and delusive.

Nor can we imagine that our people will go out and settle on the land with their wives and children (and mixed marriages are to be deprecated) unless they are assured of full protection. The South African Constabulary has now about 9,000 men. The great advantages it offers should make sure of even a more expert recruit than has in many instances been obtained, and his services should be available for a longer period. It is the old, old story of "more haste, less speed." The force has been rapidly organised under extravagant conditions. It is quite impossible that these can stand without material alterations. Colonel Nicholson, Colonel Curteis, Colonel Edwards, Colonel Steele, Colonel Ridley, and Colonel Pilkington have worked hard in the absence of the Inspector-General, to organise the force as far as possible under the actual conditions of affairs. But the S.A.C. has as yet scarcely approached the elements of police duty. It has been almost wholly employed in military work as an irregular corps, and is likely to be so for some time.

Its training in this respect has hardly been of a character to make the transfer to police functions by any means easy. It is quite clear that the force will have to be double its present strength to do any good, and gradually to occupy and hold the entire country by small posts, and prevent any movements or combinations hostile to our dominion. Fortunately this increase of establishment can be effected with little addition to the present establishment of 285 officers, for a constabulary body does not want officering on the same scale as a military unit in the field, and a revision of the grades of sergeants and constables and perhaps of pay and allowances, as also a simplification of uniform, will effect a reduction in the expenses, which now approach the total revenue (£4,000,000) of the old Transvaal Administration.

XXXVI.—THE COMMERCIAL EFFECT OF THE WAR.

It only remains to glance at the commercial effect of the war up to present. So far as the United Kingdom is concerned, it has led to the expenditure of a colossal sum among the artisan masses in the manufacture of military stores. To such an extent has this been the case, that nearly all home reserves have been entirely exhausted, and the demand greatly exceeding the power of supply within any reasonable time, many orders have had, unfortunately, to be placed abroad, and especially in the United States and Germany. But of all the hundreds of ships employed, and being employed, no foreign flag has been chartered, although an occasional passage has been given to the German bounty-fed line, which has the monopoly of the East Coast trade, including that to Zanzibar, Uganda, Aden, and Egypt. Freights have been and are in active demand, and this has given a great impetus to shipbuilding, which affects the whole of the iron trade. The demand also for railway material has been far in excess of the supply, and is likely to continue for some years; and orders for iron buildings, corrugated iron, barbed wire, agricultural implements, machinery, and everything required for the restocking of the country are pouring into our counting-houses. The working man, and indeed no class in the United Kingdom, has not as yet felt in any material degree the pinch of war or taxation, and still less in any other part of the Empire. Australasia and Canada have shared in the great demands of South Africa for meat, grain, hay, and horses, and this will continue for some time to come. Even the unfortunate and abandoned West Indies have benefited. But all this is as nothing to the coming demand when peace is restored, if only adequate steps are taken to preserve it. Nor is this prosperity confined to other portions of the Empire besides South Africa. There, also, the returns of the Chambers of Commerce of Cape Town, Port Elizabeth, East London, and

Durban, which, despite the war, show a great advance upon anything previously prevailing. The imports of British goods amounted last year to nearly £20,000,000. Land has risen immensely in value, and in many cases doubled. The greatest trouble is to afford discharging facilities to the number of vessels arriving; and despite the expenditure of large sums at Cape Town, Port Elizabeth, East London, and Durban, on harbour works and docks, the detention of vessels, some even for 100 days and more, has been a grievous loss to shipowners and importers. The military are largely responsible for this by their occupation of wharves and warehouses. But now that it is certain that their requirements will continue on a large scale for some years, they should endeavour not only to establish a more regular transport service, but to have their own steam lighters and godowns, so as to release the south arm at Table Bay, and other piers and warehouses at Port Elizabeth, East London, and Durban, of which they have taken almost exclusive possession. Natal in greatest degree, and Cape Colony to some extent, are preparing for the boom.

The future of Johannesburg is impossible to estimate. In 10 years it will probably be one of the largest cities of the Empire. Everything points that way, and apart from the direct demands for British goods from that city and the new Colonies, it must be remembered that nine out of ten fortunes made therein, will be spent in the United Kingdom. Life is expensive and extravagant. Salaries are large, for an idea is often worth £100,000, and men of big ideas command their value. Although the policy of Lord Kitchener, that Johannesburg can only be re-occupied in proportion to the adequacy of supplies and the power to protect the lines of communication, must commend itself to all, Lord Milner can be relied upon to omit nothing to hasten the material development of the wide territories over which, with the confidence and devotion of all the King's loyal subjects, he has held and maintains the Union Jack.

The Rt. Hon. Sir CHARLES W. DILKE, Bart., M.P. (Hon. Member R.U.S.L.):—There is such an enormous amount in Sir Howard Vincent's paper that it is certain there must be many points in which we shall agree with him, and many points in which we shall differ from him. The fact in which we shall all agree with him will be as to the amount of work he has put into his paper. As to that, there can be no difference of opinion. The paper is a storehouse of facts, and we shall all of us be able to draw from it the class of facts we wish to draw. In opening the discussion to-day, which I dare say will be continued on a future occasion, I should like strictly to confine myself to one topic which concerns what seems to me to be the most practical of all the matters upon which Sir Howard Vincent has touched—I mean the present stage of the war, the changes which have been introduced into the Boer tactics recently, their effect upon our troops now in the field, and the kind of military action by which we must hope to be able to deal with those tactics in the present and future stages of the war. Sir Howard Vincent in the early part of his paper has paid a very natural tribute to one who has gone—one who

lectured here on two occasions—but it is a tribute which, perhaps, so far as the substance of his views are concerned, goes a little too far for me upon the particular point upon which I wish to invite discussion to-day. Sir Howard Vincent says of the late Russian State Councillor, M. Jean de Bloch, that his work upon the subject upon which he lectured here will long be a monument to his far-seeing intelligence and perception. Of course there is a great difference of opinion amongst us upon the question, I well know, though, personally. I cannot but feel that Sir Howard Vincent in his paper to-day contradicts M. de Bloch's views upon what, perhaps, is the most important point. One of the most rooted opinions which that eminent civilian authority had formed on war by very careful study was that modern weapons and their influence upon modern warfare made what may be called the old-fashioned cavalry action, the shock action of cavalry, entirely prehistoric. Sir Howard Vincent shows that he does not take that view. There is an interesting passage in the paper, and certainly one with which I most cordially agree, in which he says that this war has revolutionised our modern views in this country on that subject in the opposite direction—I mean as to the extreme utility of cavalry, even though mounted infantry as well as cavalry may have to be employed in the field. That raises the whole question of mobility, and the whole question of what has been the cause of our failures, or comparative failures, with regard to which Sir Howard Vincent has used rather strong language. He admits that our columns are mobile columns—not that portion of the Army which is stationed on the lines of communications and keeping up the blockhouse system—but the moving portion of the Army—the 61 mobile columns—and he admits that "after two years of incessant trek, both officers and men are inclined to try and make themselves as comfortable as possible, and that supervision over the growth of baggage is certainly necessary." How do the Boers move about? How is it that all our most intelligent officers, writing home to their friends, say: "While we have improved, while we have learned a great deal, the Boers still have the legs of us." We are sending out enormous numbers of horses. The Government now tells us—how far it is completely true, I do not know—that the horses have the necessary rest before being sent into the field. We know, of course, that at first the horses had not that rest, but now we are told they have. At all events, enormous numbers of horses are being sent out. The Boers have large numbers of troops in the field, their best men unaccompanied by transport of any kind, carrying everything on horseback, moving from place to place with native servants who act as their cooks, all of whom are mounted and unaccompanied by any carts. Those Boers we cannot catch, and until each mobile force of Boers can be dealt with by men even better than themselves in their own line of business, it seems to me that the war cannot come to an absolute end. The blockhouse system is very important for securing the lines of communication and for preventing the enemy from moving from one part of the country to the other, but for absolutely bringing the war to a close it seems to be inefficient. That, I think, is the most practical portion of Sir Howard Vincent's remarks, and the most practical thing we can consider in this discussion. The lecturer appears to throw the blame, as I gather, upon the Government. He says that the valuable experience acquired in the organisation of the first contingent of the Yeomanry was ignored in the raising of the second; that the second were badly composed; that they were selected in extreme haste, and then he adds: "Small wonder that Lord Kitchener was not at first so appreciative of the 16,000 men of the second contingent of Imperial Yeomanry as he was intended to be, and little relished the privilege of having to teach them to ride and shoot," and so on. We are told that Lord Kitchener desired that the men should be sent out untrained. I imagine that can only mean that he

preferred having them sent out untrained to not having them sent out at all. It was at a most critical period of the war, yet we delayed four or five months in sending those troops out. Those of you who have read the report of Colonel Lucas, Deputy Adjutant-General of the Yeomanry—what is known as the Imperial Yeomanry Report—are aware that all the authorities in South Africa, and the Yeomanry authorities, were constantly pointing out the necessity of filling up the gaps and keeping the regiments up to their full numbers. They were allowed to fall off, and although Lord Kitchener applied for Yeomanry to fill up the wastage on 13th December, two days before the second Dutch invasion of Cape Colony, which was on 15th December, up to 28th December there was still an absolute refusal to recruit more men for the Yeomanry. The announcement of the recruiting for the Yeomanry was only made in the second half of January, whilst the announcement of the full number was only made on 7th February, the full number only being begun to be raised after that. In the recent unfortunate incidents we have, I think, to consider what has been the nature of those incidents and to see how, as the lecturer has said, the Boers have modified their tactics, and how we must, if possible try to meet those tactics by employing men who are better even than the enemy we have to face. I am to sorry to say that (although on the whole we have undoubtedly made way in the recent stages of the war, and not merely in the Irish sense, but in the ordinary sense of the word, seem nearer its close than we did a little time ago)—even during the present financial year, which is a definite period to consider, because April last was about the time when the old Yeomanry came home and the new Yeomanry went out—there have been no less than sixteen occasions on which more than fifty men have surrendered at a time or lost guns, or both. Now, on a large proportion of those occasions, the defects, so far as we know the facts at present, seem to have been in our mounted men—either defects in their quality or in their training, or in the condition of their horses, or perhaps a little of both. And there has been this remarkable fact, which, I think, would have been a staggerer to M. Jean de Bloch, had he lived, that certainly on five out of the sixteen occasions mounted forces of Boers have caught our mounted forces, as cavalry ought to catch infantry, and have charged home, and on three occasions have charged right up to the guns. That is an extraordinary change. In the early stages of the war no action of that kind on the part of the Boers was visible, and this change in their power of charging home in this way on many occasions, and inflicting, as they have done, losses upon us, both of men and of guns, must have been due to our even now being terribly behind in the training of our mounted men, and in the composition of our columns—in fact behindhand, in what I may call, cavalry work. It seems to me, as a student, that it must be amazing to a cavalry officer, either English or foreign, to find that on occasion after occasion the Commander-in-Chief was obliged to report a mounted British force as "suddenly surprised," and that they have been either captured, or by extreme gallantry on the part of the officers and men, succeeded in repulsing the attack which had absolutely come home to the guns. These facts, I think, point, as the lecturer has said, to our having been constantly behind in our preparation. The result has been that the task has been thrown upon the officers in the field in South Africa of doing that which, against such an enemy as the Boers, it was dangerous to do, viz., to nurse their columns in the field. We have had to send out men who, although gallant, were not sufficiently well trained, or well mounted, or not sufficiently provided with intelligence, or knowledge, of cavalry work to prevent their being surprised in this way by a formidable enemy. All our officers in their letters home—and this applies, I am sorry to say, to the Colonial levies as well as our own—say that, however gallant the levies have been, whether from the failing of the

officers or from the failing of the training, they have had to nurse them with Regular troops. The moral must be "preparation." The moral must be that we should force upon our rulers the necessity of preparation well in advance; and that it should not be possible in the future that five different accounts could be given of such a delay as that which occurred in the case of the second contingent of the Colonial troops, and in the second lot of Yeomanry—accounts which were no doubt perfectly satisfactory to politicians, but not at all satisfactory, I think, to the generals who have to command these men in the field. The lecturer has referred to the prospect of the conclusion of the war. Although the difficulties are gigantic, there is so great a disproportion in numbers that it may be said we ought reasonably to expect that the war cannot last much longer. But even at the present moment, from the latest information we have received, it appears that some of the most important military stations which we hold are still surrounded, so far as the ordinary passing into the country is concerned, by a sort of line of Boer stations at a distance of some 12 miles. For no less than six months at a time Pretoria itself was so surrounded. Within 15 miles of Pretoria there were Boers upon every line, except three lines, which were kept open by the blockhouse system. In every other direction for six months at a time the Head-Quarters of our Army with the Commander-in-Chief were surrounded. I cannot help thinking that had we a small picket force superior to our opponents, of the kind we ought to get from the Army in South Africa, such a condition of things would be impossible. For six months at a time it is known where the enemy is, and one would have thought that counter-guerilla tactics would be adopted, and that a picket force superior to the enemy would be raised, which, by its greater mobility, could ride the enemy down. For myself, I confess that so long as we merely rely upon the blockhouse system I do not believe we shall be able to bring the war completely to an end. The only way of bringing the war to a close is to raise a picket force, unaccompanied by wheeled transport, carrying everything on horseback, so as to avoid a cavalry surprise.

Colonel Sir HOWARD VINCENT :—I should like again to trespass upon the indulgence of the meeting, and to apologise for having occupied such a great length of time, but the great width of the subject is my excuse. I have great pleasure in proposing a hearty vote of thanks to General Sir Edward Bulwer, Colonel of the Royal Welch Fusiliers, for so kindly coming here this afternoon and taking the Chair at this large gathering.

The CHAIRMAN (Sir Edward G. Bulwer, K.C.B.) :—I am sure we have all listened with the greatest interest to the lecture and to the remarks of Sir Charles Dilke. It seems to me that both the lecturer and Sir Charles Dilke are really in agreement, and that there has been no wish to contradict what Sir Howard Vincent has said. I myself have been very much interested in the lecture, and from the appearance of the meeting I think you have all been interested in it. I feel very proud at having been asked to take the Chair at my brother officer's lecture. I have great pleasure in proposing a vote of thanks to Sir Howard Vincent.

THE VOLUNTEER FORCE OF INDIA.

By Captain E. DAWSON, Rangoon Volunteer Rifles.

THE present moment, when so much of the attention of thinking men is, very rightly, being directed upon the defences of the Empire, appears to be a favourable one for enlightening the public generally, and the readers of this JOURNAL in particular, upon the subject of the Volunteer Force in India.

In the quarterly Journal of the United Service Institution of India in July, 1899, and April, 1900, there were published papers contributed by me, intended to call attention to the defects of the existing Volunteer Force, and embodying a proposal for its re-organisation on the basis of a paid force, to which I gave the name of Militia (for want of a better). The preparation of a third paper, containing the details of this proposal, and working out the cost of the scheme, was interrupted by my departure for South Africa, where I served in the campaign as a sergeant in the regiment of mounted infantry known as Lumsden's Horse.

The Volunteer Force of India may be said to be the progenitor of the Volunteer Force of Great Britain, for it dates from the Mutiny year 1857, and in all probability the services rendered by Volunteers in India during that and the following year gave life, or at least added impetus, to the "movement" in England, which in 1859 resulted in the formation of the present British Volunteer Force. But after the latter had been established by law, the Volunteer Force of India was taken in hand and organised upon practically the same basis. The "Indian Volunteer Act" and "Army Regulations, India, Vol. IX., Volunteers," contain abundant internal evidence of being drafted and compiled with the English Act and the English Regulations as models.

It would seem that anyone having any knowledge of Anglo-Indian life could have foretold that the system which succeeded in Great Britain would fail in India. In my opinion, it has done so. By this I mean that in the Volunteer Force of India, as it exists at present, the Government of India is not getting reasonable value for its expenditure of money.

Now, if in this article I proposed to elaborate a complete scheme of Imperial Defence, I should certainly advocate very considerable changes in the constitution of the Volunteer Force of Great Britain. Further, I think it highly probable that in an ideal scheme the Volunteer Force, as

such, would disappear altogether. Academically speaking, it ought not to exist. But, on the other hand, no one who knows anything about it will deny that, as it stands, the Volunteer Force of Great Britain is cheap at the money. With all its defects and anomalies, it is a valuable asset in the national property.

The reason for this is that among Englishmen and Scotchmen there is always a certain proportion who are fond of shooting and have a natural taste for military matters. There is a good deal of talk about patriotism—the word has been hard-worked of late—but I am persuaded that, in England, the average Volunteer between 17 and 30 years old joins his corps and stays and works in it as he joins and plays in his cricket or football club—because he likes it. He is no worse patriot, and the better soldier, for though a spirit of exalted enthusiasm will make a man do great deeds, aptitude and natural taste are better aids to the learning of work.

The proportion of efficient Volunteers to the male population of Great Britain works out, roughly, at $1\frac{1}{2}$ per cent., and I take it that this figure represents the *natural* strength of a Volunteer Force organised under the British system. In India the proportion of efficient Volunteers to "male Christian literates" is about $8\frac{1}{2}$ per cent., and as, of course, all of this class are not eligible, probably 10 per cent. is nearer the mark, as representing the proportion of those who accept service among those to whom service is possible.

We all know how figures can be juggled with. A "Member for India" with the above information in his pocket might use it with telling effect in an argument favouring the reduction of British garrisons in India, as proving how the Anglo-Indian population has shown a more military spirit than that of Great Britain, and contributed relatively more to the strength of the Auxiliary Forces of the Empire.

I hope to be able in this article to show that such a use of the figures would be deceptive.

The actual number of Volunteers returned as efficient for the whole of India in 1897 (at the moment I have no later returns within reach) was 27,000. At the present time the number is, probably, somewhere between that and 30,000. The majority of the rank and file are men of mixed blood (Eurasians), ranging from almost pure Europeans, through all the intermediate grades, to almost pure Asiatics. A very large number in some corps, a large majority, are clerks and other subordinates in the service of the different Government departments. It is a perfectly open secret that most of these are not Volunteers at all in the same sense that men are Volunteers in Great Britain. Of course there is no actual compulsion, but the circumstances of their lives, in many cases their daily and hourly subordination to official superiors who

are Volunteer officers, give to requests and persuasions on the part of these latter a force which makes them approximate to commands. Even when there are no such requests and persuasions (as, for instance, when the head of an office is not specially interested in the Volunteer movement) there is always a feeling almost indescribable in English, that it is better and safer to be able to please the powers that be by saying that one is a Volunteer.

The "pot-hunter" is not, I think, more common than in England, but the man who joins for what he can get in the way of clothing, boots, and "refreshments" undoubtedly is. There is no medical examination to pass, and no minimum as to measurements.

In one way and another the paper total of the Volunteers in India has been artificially raised till it is far in excess of what, judging by the home standard, is the normal and natural proportion, and at the same time the average in physique, and in every quality that makes good Volunteers, has been lowered.

It would be wrong to blame Government, and unjust to say that the existing state of things is due to a desire to deceive, to make the public and Government at home think that the Indian Volunteer Force is stronger and more efficient than it really is. The circumstances of an alien but ruling minority must be considered. I prefer to think that Government has tacitly made use of the organisation and machinery ready to its hand for the purpose of offering to every man whose interests are, by the ties of blood, religion, and custom, bound up with, British supremacy in India, the opportunity to learn the use of arms, the right to bear and possess arms, and the means of qualifying himself to protect those interests and that supremacy by defending his own life in such emergencies as are always possible in India. This, at any rate, has been done. The poorest subject of British descent can, at the cost of the State, learn to use a rifle, and know that Government keeps a rifle for him ready in an armoury. More than this, if he cares to devote time and trouble to improving himself in shooting at Government expense and under trained instructors provided by Government, he has a chance of winning money in prizes, which Government offers.

This, I say, has been done. Broadly speaking, and with a reservation in favour of certain "crack" corps which contain a good stiffening and even a majority of Europeans, this, so far as useful achievement is concerned, is the limit. In my opinion, it could have been attained at a much smaller cost by the institution of State-aided rifle-clubs.

The Indian Volunteer Force costs the State about 1,300,000 rupees, or about £130,000, per annum. This is the sum set down in the Army Estimates for the current year, under the head "Volunteers." In the

second of my papers referred to above, I discussed the Estimates line by line. I do not wish to go into details and figures here. It is enough to say that the Indian Volunteer costs per head something like half as much again as his comrade at home. And it must be remembered that the Indian Volunteer is clothed in cheap khâki drill, armed with the Martini-Henry rifle, and unequipped. When I say "unequipped," I mean that during eight years of service spent in many different parts of one province and in four different corps, I have never seen a Volunteer who had a water-bottle, a greatcoat, or a haversack.

It may as well be admitted at once, that under no circumstances could the Auxiliary Military Force of India be equal to the Volunteer Force of Great Britain, as regards the physique of its members, and, unit for unit, it could never contain as many men possessing all the qualifications of good soldiers. But to say this, is not to say that a reasonably useful force cannot be evolved from the available material. There are two things that can be done:—

1. The men whom we now have as Volunteers can be improved by training and discipline.
2. Under a better system we can get hold of better men.

With regard to 1, I hold that those who condemn Eurasians as useless in the military sense are entirely wrong. Without going back to the records of the Mutiny (which contain many examples of good and gallant work done by Eurasians), we need only look around us to-day to see that training and discipline can make soldiers of men who without these forces are inferior to Eurasians, as these latter are to Europeans. If I addressed civilian readers it might be necessary to go deeply into this matter, but I am sure that no reader of this JOURNAL can be ignorant of the work that has been done, for instance, in the Egyptian Army during the past few years. I do not speak of the Sudanese battalions—these are drawn from a fighting stock—but of the ordinary Egyptian soldier, the Fellah trooper and infantryman. Will anyone who has been in India and knows the Eurasians deny that he is, as he stands, more of a man than the uncaught, untrained Fellah? And will anyone assert that any man in whose veins there is any British blood at all is inferior as material for the drill-sergeant and the musketry-instructor to work upon, to that material which came under the hand of "Sergeant Whatsisname," when, as Kipling told us—

"He drilled a black man white,
He made a mummy fight."

And again, when of the same wizard it was sung—

"He's a charm for making riflemen from mud."

Everyone knows what the Egyptian soldier is to-day.

¹ Published in the Journal of the United Service Institution of India, April, 1900.

But these miracles cannot be worked without the magic of discipline. The British Volunteer takes it as part of the day's work. He likes the work, and he knows that he must subject himself to discipline as a part of it. It is a wonderful and unprecedented thing—discipline without compulsion. The average Eurasian Volunteer (who has become one not because he likes it, but to please his employer or to get a pair of boots, or, perhaps, to be able to crow over his native neighbours by demonstrating that he is a "sahib," or from some one of many obscure reasons that it is difficult for an Englishman to guess at) looks at things from an entirely different point of view. The day is hot, the rifle heavy, the drill tedious and wearisome. The sergeant-instructor speaks sharply, perhaps a little roughly. An Englishman simply grins and pulls himself together, but the Eurasian feels himself insulted. After all, why should he subject himself to these trying experiences? His sacrifice of comfort is evidently unappreciated. The last time he went to the range the company officer had been niggardly in the matter of sandwiches, and the ginger-pop was not well iced. The major's horse came near treading on his toes, and a rear-rank man treads on his heel. Finally, the subaltern behind him reproves him for talking in the ranks. It is too much; he slouches home, pulls off his belt, and "resigns." Next season he will come up smiling to a new company officer, be patted on the back, and rejoin; or very likely there is another corps in the same station, and he will join that before the season is over, and get another pair of boots if he can.

I have some claim to speak of these matters with authority, for I have served in the ranks of the Volunteers in England and (in two different corps) in India. I have seen men bolting in twos and threes into the jungle from companies practising the attack, and hiding there until they could sneak away. I have seen the whole fatigue work of a "camp of exercise" being done by the sergeant-instructors and half-a-dozen Volunteers, while the rest loafed in their tents or in the shade, refusing to do a hand's turn. And I have heard the talk in the ranks.

Officers are, of course, partly to blame, but they know that they have no real power.

But it is my opinion that discipline would change all this. Place restrictions on the power of "resigning," and give me the power of the purse at my back, and I will undertake to turn these men into soldiers. Everyone likes to earn money, and nearly everyone has some sort of sense of duty in connection therewith. Men who will not work so as to earn approval and promotion, when promotion means only a little more worry and responsibility, will do so willingly when it also means a little more pay at the end of the month. At present the more ignorant Volunteer

sees absolutely no use in his work, and wonders why he has to do it. He argues that it can't be worth much or he would get paid for it, as he and everyone else gets paid for other work. The principle of payment once introduced, the most ignorant would feel that there really was something in the business, that it was not just a dreary kind of game.

2. In spite of the percentage of Volunteers to eligible population having been forced up in India to far above the natural figure, there are hundreds of men who are in every way eligible and who ought as citizens to contribute to the defence of the country, but who are not Volunteers at all. And, by the irony of circumstances, most of these are the best men, the men who, as officers or in the ranks, would be the backbone of the ideal Auxiliary Force. Go into any club, "gymkhana," or other place in India where Europeans congregate in their leisure hours. Go to any football, or cricket, or polo, or tennis match, or any boat race or golf tournament in any large station or seaport town. You will be able to count by the score young men, civilians in Government service, barristers, merchants' employés, and others who devote hours of every day of their lives to sport and athletics, but never an hour to training as Volunteers.

I will not admit that this is due to any lack of patriotism, to laziness, or to the absence of any military spirit. These gentlemen are in a sense of the *élite* of the middle class of this Empire; they are of the stratum of society which is one of the fruitful sources of the strength of the nation. Their fathers, their brothers, are in the Army; their friends are Volunteers at home. That they are not bearing their share in the defence of the country is one of the results of the re-action upon itself of the inefficiency of the Indian Volunteer Force. They are told, or they see for themselves, what the Volunteers are, and they hold aloof.

The Militia would get its fair proportion of these men—a larger proportion than the Volunteers at home get—because the need for auxiliary defence is here, when all is said, more self-evident than at home.

Of course, I do not mean that this class of men would be drawn into the ranks by the inducement of pay. They are the very class upon whom that bait would have, directly, no effect at all. But they would speedily recognise in the Militia a sound and practical organisation upon a business footing; they would see that it was efficient, and they would feel that by joining it they were doing their duty as citizens. This, at least, is what I should confidently expect.

In the Volunteers discipline practically does not exist, and *esprit de corps* is rare. The public at large declines to take us seriously, and it becomes increasingly difficult to get good men to join or to remain. Zealous officers find themselves in a minority, and too often cease to be zealous.

The conditions in India are not such as to make an efficient Auxiliary Military Force impossible, but experience has shown that such a force cannot be created for India by the same methods as those which have produced the Volunteer Force of Great Britain.

The efficiency of that force, as far as it goes, is only rendered possible by the immense mass of material available.

In maintaining an Auxiliary Military Force the objects of the Government should, in my opinion, be :—

To organise a second line of defence. To form effective military units, capable of concerted military action. To bring these to such a standard of efficiency that they could be safely used to take the places of British garrisons unavoidably depleted. To produce a force which, in emergencies, such as disaffection in the Native Army or Police, riots, jail outbreaks, and the like, would be capable of preserving or restoring order, and generally protecting the lives and property of loyal subjects.

To achieve this object, the scheme which I put forward is, briefly, as follows :—

To repeal the present Volunteer Act, and pass an Act constituting a force to be called the Indian Militia. This force to consist of Active and Reserve branches; men to be sworn in and to engage for a fixed period of years in the Active branch, at the end of which they would have the option of re-engaging (if physically fit) or passing into the Reserve.

All ranks to receive pay, at rates to be prescribed, for the time actually spent by them in military training or duty (*i.e.*, the rate *per diem* being fixed, the number of hours equivalent to a day for pay purposes to be laid down by law). Pay of Reserve to be half that of Active branch.

A compulsory minimum of days' training per annum to be fixed. For the Active branch, this to include not less than seven days' continuous training in Camps of Instruction.

Clothing, equipments, and arms to be substantially the same as for British Regular troops in India.

Officers to be nominated by Local Governments, and to serve on probation for one year or two years, either period to include not less than three months' duty attached to a Regular regiment. During period of probation, examinations in Musketry Drill, Tactics, and Organisation to be passed. The "Garrison Classes" to be open to Militia officers.

Travelling for purposes of Militia training or other military duty to be at the public expense. Grants-in-aid of cost of uniforms, etc., to be made to officers on first appointment being confirmed.

After a certain number of years from the formation of the Force, seconding of adjutants from Regular regiments would cease, and adjutants would be selected from the Militia.

A selected Regular officer to be appointed Inspector-General of Militia, and to devote his whole time to the work of that office. This officer to be responsible to Government for the efficiency of the Force as a whole. In each Province or Presidency, a Regular officer to be appointed Deputy Inspector-General. All these officers to have personal assistants, who would ordinarily be selected Militia officers.

The cost of the Volunteers at present is unnecessarily increased by the existence of several corps in each province. The Militia would have only one corps of infantry (including mounted infantry, substituted for the present "Light Horse") in each Province, divided according to circumstances into administrative battalions.

For the Militia, there would of course be a medical examination. To provide for those physically unfit for service, and for persons who for various reasons would be unable or unwilling to serve in the Militia, I would propose the establishment of Rifle Clubs without any military organisation whatever. Such clubs would be furnished by Government with Martini-Henry rifles only, and with ammunition, free up to a prescribed limit, and beyond it at cost price. They would be allowed the use of ranges, and their arms would be kept at Militia armouries.

The Deputy Inspector-General of Militia in each Province would be *ex-officio* President of the Provincial Club, and the names of the elected committee would be submitted for his approval. Shooting prizes might be offered by Local Governments.

I have not yet been able to place upon paper all the details of my proposed scheme, which would of course include the estimated cost. Apart from the preliminary and not recurring outlay upon the establishment of the Militia, its cost would naturally depend upon the strength of the Force. It would be possible, for a beginning, to limit the sanctioned strength to such a number that the present expenditure upon capitation grants (roughly speaking, half of the total allotment) would cover the pay of the rank and file, at any rate. The greater part of the other half of the present expenditure is absorbed by the pay of adjutants, and more than half of this would be saved by the reduction in the number of corps.

Whatever the cost of my proposed scheme would be, my contention is that it would be money laid out to advantage, whereas a large proportion of the amount spent on the existing Volunteer Force is absolutely wasted.

Those who are upon principle opposed to sweeping changes may ask, Is there no method by which improvement could be brought about within the lines of the present system? Frankly, I do not think that such improvement is possible as would guarantee to Government a return of full value for the present expenditure. Some amelioration might certainly be effected. The first step to this would be to make someone

responsible. It is this principle of fixing responsibility which makes Government in every other Department in India possible and efficient. For the Volunteers no one is responsible. The Government of India is in the habit of being well served by its paid officials and advisers; and if the Department of Auxiliary Defence had had its responsible head, the present deplorably unsatisfactory state of things would never have existed. Either some sort of efficient Auxiliary Force would have been created, or the attempt would have been abandoned and the money devoted to some useful purpose, such as the improvement or augmentation of the Artillery in India, or harbour defences. (£130,000 is a good round sum. It is about equivalent to the annual cost of four battalions of Native Infantry and two mountain batteries.)

If, therefore, instead of re-casting the whole matter of Auxiliary Defence, the serious taking in hand and improvement of the existing Volunteer Force is determined upon, it will be necessary to depute a military officer as Inspector-General of Volunteers, and to make him responsible. In the present state of the Force, however, it would be practically impossible to do this without first appointing a Committee to enquire and report what changes in the direction of efficiency are necessary and possible within the limits of the present system. And if such a Committee were given a free hand, I think there is every probability that their deliberations would result in Government being advised to consider the adoption, in lieu of that system, of some such scheme as that which I have outlined above.

Here also is a plan by means of which the numerical strength of the Volunteer Force might be very largely increased and its character improved to such a degree that some sort of efficiency might be looked for. In suggesting it (for the consideration of a possible committee) I make no claim to originality.

An Act to be passed constituting an Indian Militia and making every European or Eurasian liable for training and service therein upon emergency. Local Governments to be authorised to call out men for training annually by ballot. Men who could produce a certificate of "efficiency" as Volunteers for the current year to be exempt from the ballot.

The result of this would be that in all employments preference would be given to Volunteers, because their work would not be liable to interruption for Militia training, and, consequently, *all* wage-earners would be more or less bound to become Volunteers.

This plan would have to go hand-in-hand with a far stricter and more rigid enforcement of the standards of "efficiency" than is insisted upon at present. It would be the duty of the Inspector-General to see to this.

The strength of the Volunteer Force would be automatically more than doubled, and its cost proportionally increased, but its efficiency would be increased in a much smaller ratio. The Militia would be a skeleton force, and its cost would be small.

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The events of the past twelve months have demonstrated for all the world to see the solidarity of the Empire. Morally, the solidarity is actual; physically and materially, it is potential. These events have shown us our strength and our weakness, and have turned the national mind and the minds of statesmen towards Imperial Defence, while revealing sources which can make Imperial Defence a definite and organic thing.

"Defence and Federation," "Federation and Defence"—these words, which have acquired a force and a meaning they never had before, are indissolubly linked together. The hour has come, and our statesmen must not neglect it. If the magnificent inheritance, into which our gracious King and Emperor enters in this first year of the new century, is to remain great and free and peaceful, it must be made safe, and now is the time to do it. The temper of the nation was never, and perhaps never will be, more favourable.

"Our 'greatness' must not fail
Through craven fear of being great."

It is of India that I write, because it is in India that my life and work are. I know that India is not a Colony, and that its government and its defence require special methods. I also know that the importance of India to the Empire at large cannot be exaggerated.

Every part of the Empire has its duty to do. Canada and Australia have shown that they are ready for their share. Shall not India also be deemed worthy?

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There are ancient proverbs anent foul birds and stinking fish. Lest it should be said that they are applicable to my case, I anticipate the criticism by saying that it is only in the hope that I may be able to do something, however little, towards bringing about a better state of things that I continue to hold my commission. Since my brief experience of active service (shortened, I regret to say, by severe illness) administrative changes have caused me to be transferred in my civil capacity to a place where I can be of no use whatever as an active officer of Volunteers. I seem to myself, therefore, to be doing that which my hand findeth to do in devoting some of my leisure to writing upon this subject, which appears to me one of the greatest importance.

MILITARY OBSERVATIONS ON THE WAR IN SOUTH AFRICA.

Translated, by permission, from the "Militär-Wochenblatt,"
Beihet 8, 1901.

[These observations on the South African War, sent to us by a German who took part in it, are published here on account of the Military lessons which may be derived from them.]

THE most interesting portions of every campaign to the military student are the strategy and tactics employed in it. Both are dependent in great measure on the nature of the country in which war is being waged, the extent of its civilisation, the resources which it offers, the configuration of the ground, and the climate. It may, therefore, well be said that different strategy and tactics are necessary in different circumstances and countries. Accordingly, comparisons cannot be drawn between South Africa and Germany without making certain allowances. Many of the events which have taken place there, and the military measures which were necessary, are of no possible importance to us, as they are not suitable to our conditions.

In the region of strategy and tactics there are, however, principles common to all, and applicable in nearly every case, and of which the South African War affords many examples, for in it armies were opposed to each other, both of which were armed with modern weapons, and whose civilisation was much about the same as our own.

As regards the strategical operations themselves, there is little that is fresh to be learnt. Omitting the attacks of the Boers on the somewhat weak division of General White, we see their leaders anxiously sticking to the defensive, and that in its weakest form, namely, passive action of cavalry, and taken on the whole they have remained true to this kind of tactics as far as organised resistance lasted. The present form of the war, however—namely guerilla warfare—has no bearing on the military operations of Regular Armies. As regards the British, we see them in the first period of the campaign, employing against the weakness of the Boer defence the most unfavourable method of attack imaginable. Instead of taking advantage of the enemy's apathy by trying to outflank

their positions, or when their intention was really to attack them, by treating them (as they really were) as improvised fortresses, we see the British devoting themselves entirely to frontal attacks, with disastrous results. If the strategy of to-day is the art of concentrating different portions of an army by different roads on to one battle-field or narrow place of operations, there is little to be gathered from this war except that a frontal attack, even when combined with great superiority in the use of the bayonet, will nearly always lead to a defeat when opposed to modern fire-arms. Even the later operations under Lord Roberts are scarcely calculated to arouse interest in their strategy; no doubt we find in them the idea mentioned above, of manoeuvring the enemy out of his position, carried out with success. We also see the principle observed of marching disunited and fighting united, also that of attacking an enemy in a strong position in other ways than merely in front; still the movements of the different columns were, as a rule, so little dependent upon one another and were separated by such great distances that mutual support would have been almost impossible, even if such had been desirable.

The important principle was therefore violated of keeping the different divisions of the Army near enough to one another to prevent their being beaten in detail.

Had the Boers taken full advantage of their own greater mobility and attacked the different detachments one after another with united forces, their success would have frequently been assured. That this did not happen is not to be ascribed to skilful concealment of movements or their rapid execution on the part of the British, but solely to the boundless want of energy of the Boer generals. We can scarcely rely on such conduct in the case of a European enemy, and it is not to be wondered at that the British, whose leaders knew their objective, were finally successful, notwithstanding many unskillfully conducted operations on the part of subordinates. But it would be wrong, in my opinion, to claim preference for pure attack or pure defence on account of this final success of the attacker or the partially brilliant individual successes of the defender.

Attack or defence will always be chosen according to circumstances, and it frequently happens on the field of battle that the attacker becomes the defender and *vice versa*. The most favourable method of accomplishing the desired object when on the defensive is, as a rule, first to allow one's opponent to rush headlong forward under heavy loss, and then to complete the victory by attacking him.

I mean, of course, that the former should be enticed into storming distance of the latter's position.

If he does not do this, the only course remaining to bring matters to a decisive issue is the counter-attack pure and simple, but its success depends on the way it is carried out.

But it may, however, be maintained with certainty after the experiences of the South African War, that the attack can only lead to decisive results when carried out in a concentrated manner, and when this is done the chances of success are enhanced. Further, superior forces may often find themselves in such a position that they can be beaten by an inferior opponent when the attack of the latter is concentrated on one particular point.

Forcing one's way through, as was Napoleon's custom, is as good as impossible in the present day. But this of course is nothing new, and there was no necessity to go to the Transvaal in order to arrive at these conclusions.

As regards tactics, there may be perhaps something new to be learnt; accordingly, I propose to enter more closely into this part of the subject.

In my opinion, the campaign has in the main only confirmed what our authorities have for some time past recognised, and I must therefore apologise if some of the points to which I draw attention have been long known, though I cannot leave them out without making the whole picture incomplete.

I prelude my remarks by saying that the events here related are only those in which I myself took part and which I saw with my own eyes. I had, for a foreigner, the unusual good fortune of being constantly summoned to the Boer councils of war, and could therefore much more easily follow the course of events than most of my companions. Further, since I was allowed complete freedom of movement, and had an introduction from the President, I was able to ride everywhere where I thought a fight might take place, and during battles to seek out those points most likely to be of interest. For these reasons I have, comparatively speaking, taken part in many engagements, during which I have often seen more than the majority of the other combatants. It would be too long and monotonous if I were to describe all of these encounters; accordingly I confine myself to giving a general picture of the usual nature of such fights, and only making individual mention of those affording particularly pregnant examples. In the meantime, for the sake of brevity, I would begin with a few general remarks.

As regards the distribution of the different arms on the battle-field and the gradual bringing up of the fighting units into the firing line, we can derive little profit from the methods adopted by the Boers. Their mode of fighting was an absolutely irregular one.

Furthermore, they never used reserves, merely adopting a thin firing line without support in both attack and defence. Troops which came up after the commencement of the battle did so on the right and left of the aforementioned firing line. Such a thing as detachments drawn up in rear of a wing for the security of a flank was unknown. When attacked in flank they eventually withdrew portions of the front line and opposed these to the flank attack. This, of course, was only possible, because the British seldom pushed the attack home on front and flanks simultaneously, but did either one or the other, thereby enabling the Boers, who were mounted, always to meet it—a fact which proves that the mobility of the Boer infantry was far superior to our own. Whenever a portion of an Army such as ours reaches the wrong point of the battle-field, as, for instance, either behind the centre of one's own position or the wrong flank, it can seldom be made use of at the right place in proper time, that is to say, it frequently is out of the particular fight in question.

In South Africa things were different. Wherever a commando coming up came to the wrong place, it had still time by means of its horses to reach its proper position. Accordingly, such movements could often be carried out during an engagement; whilst under our conditions, troops must be allotted places before the fight, be detached from column of route at the proper time and deployed at once to the front or the required flank.

Considerations which call for observation as regards the Boers are:—

1. Their conduct when under fire in attack and defence.
2. The effect of their fire on different objects.
3. The conduct of an independent thin firing line when attacked in front and on the flanks.

There was an absence of any concerted action on the part of the artillery, as also co-operation of artillery with infantry according to our ideas.

In the first place, the Boers had too few guns, and those that they had were dispersed in such a manner that the artillery as a rule played a very subordinate part. At any rate, there was little of tactics in its employment. The British, on the contrary, adopted later the methods in vogue with us. Artillery and infantry acted in co-operation according to modern principles. Their infantry formation was that of firing line, supports and reserves.

Shock tactics were, however, still made use of, complete units being first of all deployed in the front line, supported by complete units in rear.

The natural consequence of this was the ultimate mixture of units which our tactics try to avoid. Moreover, the British shooting was very indifferent, though their mode of fighting was perhaps so far of interest, that in the subsequent course of the campaign their infantry tactics

usually did not differ in essentials from that employed in our peace manœuvres.

If I now proceed to criticise several points in their mode of fighting, it is not on account of the principle on which they proceeded, but on account of the way in which it was carried out.

I begin at the point where our methods were departed from, and if from the tactical experiences of the two contending parties there is anything of interest to be derived, it is certainly the following:—The general plan upon which the Boers acted was before everything to surround the enemy or prevent themselves being surrounded, which usually led to extraordinarily wide extensions of their very thinly distributed shooting line.

The British, on the other hand, kept their troops more together and in deep formation just as we do. Their numerical superiority allowed them, nevertheless, very often to outflank their opponents; still, it can be maintained with some certainty that in cases where the forces on both sides were anything like equal, it was the British who took the central position and the Boers the concentric.

This frequently happened, too, when the British were considerably superior in numbers, and to this circumstance, in the first place, I attribute many of the British defeats, independently of the want of system in their frontal attacks, though I should like at the outset to make myself quite clear on this point, for the principle adopted by the Boers has, to my mind, an important, perhaps decisive, influence on the tactics of the present day, and I shall often refer to it again.

The reason why the concentric form of attack is the more advantageous one lies, in my opinion, in the fact that it favours more than any other the concentration of one's own fire, whilst it breaks up that of the enemy. Fire effect is paramount to-day, all else sinks into the background.

The Boers relied for their success wholly on fire action, though they frequently made the mistake of not making full use of their superiority in it by energetic advance on the enemy; though it would be false, I believe, to conclude from this, that the weakness of their offensive power was due to this reason alone, coupled with their want of a bayonet.

Good commandoes under energetic leaders proved the contrary more than once. The unfortunate thing was that such leaders were scarce, and without energetic leaders a vigorous offensive movement is almost impossible of execution. It is just as easy to double up one's opponent nowadays by means of fire as it was formerly with the bayonet. I would here like to remark that I am only speaking in the following pages of those Boers who fought earnestly and bravely; for undisciplined and cowardly masses of burghers were rarely absent in any engagement,

and though outnumbered in most cases, they fought by no means in such a manner as to justify notice being taken of their actions.

As regards arrangements of forces, the theoretical distinction for us between shock tactics and a planned-out battle, cannot be sharply drawn in this war. For, in the first place, most planned engagements were upset by surprise encounters, since the British were for the most part in absolute ignorance of the movements of their opponents, and in the second place, most actual encounters developed into fights for defensive positions. The latter might very well be compared with our pre-arranged defensive positions in the amount of cover they afforded. The country offers such positions everywhere in its rocky mountain spurs.

As against this theory, however, it is quite easy to distinguish between pure attack and pure defence. Only a few examples are to hand of the defenders in their turn becoming the attackers, that principle on which we invariably strive to act. For this reason, I should like to touch on the distinction between them, of little value though it is, speaking first of British attacks and the defence of the Boers, and then of the offensive movements of the latter and British defence, as far as the same are applicable to our own conditions.

As a rule, engagements commenced with an artillery duel. The superiority of the British was so great, that they generally ended in the complete silencing of the Boer artillery. And in the further course of the fighting the latter as a rule did not again come into action, although it generally could have done so in most cases. The British artillery fire was then turned on the Boer firing lines, and their infantry attack commenced under cover of the guns.

Concerning the detailed stages of the fight as related above, the British generally came off victors with their artillery; though occasionally a few Boer guns succeeded in maintaining their position.

These exceptions are the only thing remarkable in this part of the action, because they offer us such excellent instances of the difficulties encountered by artillery, even when in superior numbers, in beating one opponent when he is well posted.

At Dewetsdorp there were four Boer guns—three 7·5-cm. (3-inch) Krupps and a 3·7-cm. (1·5-inch) Maxim-Nordenfeldt—drawn up at intervals of from 50 to 200 paces. These were sheltered behind the rocks in such a way that even our embrasures could not have afforded them greater protection. Opposed to them were 18 British field guns at a range of from 2,600 to 3,000 metres quite in the open, so that every gun and almost every gunner stood out against the sky-line, so clear was the atmosphere.

The fighting lasted half a day, without the British being able to accomplish anything, but several of their guns were silenced temporarily

or completely. The advantage was decidedly with the Boers, until 10 or 12 English guns, coming up late in the afternoon, took them obliquely, and the action was now quickly decided. The Maxim-Nordenfeldt alone, thanks to its shield, managed to withstand for a time what was otherwise a terrific fire, though its position had been rendered all the more difficult owing to its having been rather freely exposed a short time before.

In spite of this, only half of us, who were working the gun, were hit. Shield and jacket were, however, covered with marks of British shrapnel, and after a short time, I must confess, we also had to give up the fight. I have made individual mention of this incident because it was characteristic of most of the artillery duels, and from it several important lessons are to be learned. In the first place, it is apparent, as already stated, that even a few guns, when well posted, can hope for success against an enemy who is far superior, but whose guns are exposed. This was the more easy in the case of the Boers, owing to the unsatisfactory fire methods of the British.

The latter generally opened fire without quite knowing their enemy's position, and they scattered their projectiles over a very wide area. Correctly ranged bursts, intermingled with those which were hundreds of yards too short, and frequently projectiles which were aimed much too high burst on impact a long way too far to the rear. This was even the case when the Boer guns were quite in the open, and should have been accurately located. The Boers were by no means past-masters in the art of choosing cover for their guns, as soon as they got away from the natural protection afforded by rocks. I must, therefore, attribute the deficiency in the British shooting to indifferent service, insufficient reconnoitring and observation of fire, and faulty manipulation of the fuzes. The deficiency in power of observation may be due to the inferiority of most of the glasses used. The importance of the latter, and accurate location of the object with regard to artillery fire, was, at any rate, apparent on all occasions.

The English shrapnel burst in such a way that the fragments of the case of the shell held together and the greater part of the contents remained inside. The cone of dispersion of the bullets was extremely small, seldom above 4 or 5 metres in breadth, which considerably lessened the effect of fire, especially against the thinly occupied positions of the Boers. It occasionally happened that a man was hit, whilst his neighbours within from 3 to 6 yards remained unhurt. Notwithstanding this, the effect as regards depth was also very small, and at a hundred paces a shrapnel seldom caused serious wounds. The *matériel* of the Boer artillery—Krupp guns, not even of modern construction, and Creusots—was decidedly superior to the British. The Creusots were no doubt better than the Krups.

Nevertheless, the Boers as a rule preferred the latter, because their shells were easier set, and the Creusot guns often required repair, the glycerine brakes especially, frequently jammed. The better shell was therefore preferred to that with the better ballistic properties.

Worthy of mention in connection with the Boer artillery were the Maxim-Nordenfeldt guns. At even a range of 3,000 metres single guns of this type were successful against three, four, or as many as six English field guns. I fought at Boschrand with such a gun the whole day against four English field guns (though I must admit it was concealed), and at times silenced several of the latter without suffering any loss myself. Also against infantry and cavalry, Maxim-Nordenfeldts generally showed satisfactory and at times excellent results, especially when these offered high targets. Against cavalry they were far superior to other guns.

At Thabanchu, for instance, two British lancer regiments were so overcome by the fire of two Maxim-Nordenfeldts that they broke and fled. The continuous stream of the projectiles from these guns, whose impact can be seen, makes them especially suitable for firing at moving objects without requiring very great skill in working them.

I believe, however, that every artilleryman will agree with me when I say that it is very difficult with our field guns to make good practice against moving objects, especially if they cross the front obliquely, and for short periods of time, when the range is not known. I therefore consider Maxims very effective against cavalry; in fact, more suitable than our own field guns, for, added to their above-mentioned advantages, comes the fact that one always knows exactly where one's shots are falling. There can never be any doubt as to whether one is hitting one's own cavalry or not. This is a very important matter in cases where cavalry meet cavalry in large masses. Even the large amount of ammunition which these guns require would seldom prove a disadvantage in the short space of time that cavalry meets cavalry.

I formed the opinion on every occasion that the Maxim-Nordenfeldt is a deadly weapon, and one with an important future. And there is another point about them that I should like to mention. They were the only guns which carried a steel shield above the axle. The advantage of this was so obvious, that I would recommend the introduction of such a shield with our artillery as a pressing necessity. Armoured shields afforded excellent protection against shrapnel and rifle fire, whereby the gunners were enabled to work the guns far more coolly and more effectually. But the importance of fire effect must ever be placed in the forefront; and one of the points in this is to be able to offer as long a resistance as possible to the enemy's fire. The disadvantage of shields, namely, their weight (from 50 to 60 kilogrammes) is not a serious one,

to my mind. If artillery horses were given a uniform draft they would soon draw these extra 50 to 60 kilogrammes forward with sufficient rapidity, and there is, as a rule, time enough in action. On the other hand, horses under difficult conditions will refuse to draw a lighter field gun even than that of ours of to-day. The second disadvantage of shields is the increased visibility they give the guns, though I do not lay much stress on this either. What difference does it make to the enemy whether he sees me or not, if he cannot hit me? Cover from view, however, is often not always cover from fire. Besides, the dark grey colour given to shields and guns, considerably reduces their visibility. The introduction of shields in the case of our field guns would, however, necessitate the reduction of recoil to a minimum, as otherwise the gunners would have to come out from their cover before every shot.

A further remarkable phase in the use of artillery to which I would like to draw attention is the effect which the converging fire of the British artillery had as opposed to merely frontal fire. This was so frequently noticeable, that I would like to adduce another example, and one much to the point. In my opinion, the effect of artillery fire is frequently far greater when fire is concentrated from a number of groups separated from one another than when it all comes from the one direction. I believe this advantage to be so great, that it frequently outweighs the disadvantages caused by the loss of unity of command.

In the fight at Dunkerhoek an English brigade with a few batteries extended for attack on a high plateau, 4,000 metres wide and fully 6,000 metres long. Opposed to it the Boers had seven guns drawn up more or less in line, and the British deployed at about 3,000 to 3,500 metres from these. At first it seemed as if the British would succeed. But the picture soon changed when four of the guns took up a position on the flank; the British firing lines and reserves got mixed up here and there under the converging fire, and the initial advance was brought to a standstill, the British artillery being obliged to take up a position further to the rear, followed by the infantry with serious loss. It would have perhaps fared badly with the brigade, which became huddled together in the middle of the valley, and which could not obtain sufficient cover from the fire from both sides, had the Boers pressed forward with greater vigour, and had the former not received timely relief from another quarter. The engagement was principally conducted at such distances that infantry fire was not the principal thing, and the climax of the fight was arrived at when the artillery line divided itself into two groups and opened a concentrated converging fire. One can obtain cover from fire on one side, but as a rule seldom on two.

The procedure of the Boer artillery in action was as follows:—

The gunners worked well and skilfully.

The object to fire at and the range were judged with great care. Fire was as a rule well directed and its effect observed. But they were wanting in the courage necessary for firing up to the last.

Being better disciplined, the artillery fought better than any other Boer commandoes, yet it frequently happened as soon as the enemy's fire became the least bit hot that cover was immediately sought behind the rocks and firing stopped. Heavy losses were no doubt thus avoided, but the object of the British was attained. The Boers were silenced, and that too without a *quid pro quo*.

The conduct of both sides was somewhat similar in the subsequent period, when the British artillery became engaged with the Boer riflemen. This, too, had very often begun before the conclusion of the artillery duel, and commenced even sooner when the Boer artillery and infantry were firing from the same eminence.¹ In the latter case the favourite action of the British was to use lyddite shells from howitzers and naval guns of from 12 to 15 centimetres (*i.e.*, from 4·7 to 6 inches) and even heavier calibre. The shot itself, similar to our shell, was fired with percussion fuze. It is natural that good results with these shells could only be attained when they fall exactly on the target. Accordingly, accurate estimation of the enemy's distance, followed by a succession of shells thrown on particular spots is required. It has already been said that the British failed in the former, and, as regards the latter, the lyddite shells burst all over the place. Besides this the effect of these shells was small against men lying down. I myself was present when men's clothing was scorched by bursting shells without their receiving more than scratches. Perhaps defective manufacture, etc., was also at fault here. I have only once seen such a shell have a deadly effect. On that occasion it burst in the midst of a lot of horses and the men holding them, thereby proving its greater efficiency when impact is off the ground. One need not, therefore, be surprised that the British guns inflicted less loss on the Boer infantry than on their artillery. The former, *i.e.*, the infantry, were able to obtain far more cover than the latter, and did not show themselves as long as they were fired at. The flash of the enemy's guns was visible at such a distance as to enable everyone to disappear into safety behind the rocks, and re-appear as soon as the shots had fallen. Often during the whole time of the artillery fire not a shot fell in the places intended.

Had we not been able to see the British shots so clearly, our losses would have been considerably greater.

That I may be the more fully understood, allow me to give a short description of the country and the artificial cover of the Boers. I should like to remark, regarding the latter, that I found it by no means cleverly devised; on the contrary, I was often astonished at its lack of conceal-

ment. The oft-mentioned kopjes have mostly the form of gigantic mounds, and are almost always steep in slope. The surface is covered with large and small rocks and stones, so-called boulders. These remind one often of a dilapidated fortress wall, and are frequently so remarkable for their regularity in form that one might almost suppose them to have been entrenchments made by hand. As regards horizontal cover, one may compare these crags favourably with our field works; in some respects, indeed, they are better. The irregular notched border of the top afford the rifleman, even whilst shooting, excellent head cover. This advantage is very valuable. The practical Boers, therefore, placed larger stones on the top of these artificial breastworks of stone or earth with excellent results. Stone and rock in general are excellent cover against every kind of fire. Wounds by splinters were inconsiderable, both in quantity and quality. Even against heavy artillery fire an entrenchment of stones heaped together two to three metres in thickness was very good. The top was no doubt generally covered with sandbags, but these were, as a rule, soon shot away. Covered shelters were, however, never resorted to, owing to the absence of wood. It was often not easy to see the Boers in such positions, and this was still more difficult owing to the extremely practical dirty-grey colour of their clothing and the flatness of their hats. Still, I think the British might have done more with good glasses than was the case.

The British having accomplished so little under these circumstances, the respect of the Boers for their artillery fire was very small, especially so in the case of lyddite. The moral effect promised by the noise made by these shells was completely absent. The Boers frequently found no inconvenience in cooking their coffee in the open when lyddite fire was going on. This was scarcely ever the case with shrapnel or rifle fire. In my opinion, generally speaking, the moral impression obtained at the commencement is the forerunner of ultimate success. The former will be gained by a weapon, as long as it hits something, no matter whether it makes a noise or not. Conversely people get used to the most frightful things, when they see they do no harm, and this feeling soon gains ground. This was so in the case of the bayonet and lance of the British. The Boers completely lost respect for both after a short time.

(*To be continued.*)

STRIETENSK AS A BASE IN THE CAMPAIGN OF 1900.

Translated from the "Voiénnyi Sbórník."

THE post or *stanitsa* of Strietensk, which played such an important part in the forwarding of troops and stores in the campaign of last year, lies on the right bank of the River Shilka, opposite the present terminus of the Grand Siberian Railway. Further transit is by one of the routes that follow :—

1. The Trans-Baikal Railway.
2. The water route, when navigable, by the Rivers Shilka and Amur to Blagovestchensk, Khabarovsk, and places beyond.
3. Over the ice of the rivers mentioned in winter-time.
4. The mule track along the banks of the same rivers.
5. The track to Tsarukhaitui, old and new.

Let us see briefly in what condition these various routes were when mobilisation was ordered.

1. This line was planned owing to the difficulties of the route by the northern banks of the Shilka and Amur, to run straight through Manchuria, connecting the Trans-Baikal with Vladivostok and the consent of the Chinese authorities had been obtained for it, and a company formed to construct and work it. Every effort was made to push forward the branches connecting with the Manchurian line, the Kitaiski branch to the west from Kitaiski Razyezd to Sibir station, a distance of 216 miles, and to the east the Nikolsk Branch of the Ussuri Railway from Nikolsk-Ussuriiski to Rogranichnaia. At the same time the preparation of the Trans-Baikal line, which was estimated to be ready by the 1st July, just about the time for mobilisation, was hastened. The line itself was finished, but not in working order, as the rolling stock for it was stored at stations of the Central Siberian near Irkutsk. The chief difficulty of bringing it up was in crossing the lake itself, where at that time there was only one ice-breaker, the "Baikal," the other, the "Angara," being still incomplete. Thus this line could not at first carry as many troops or stores as it should, both for want of stock and because it had to convey the troops of the Trans-Baikal district and the materials

for constructing the Kitaiski Branch. However, the "Baikal" was made to make extra trips to bring up the stock, and the "Angara" was completed, and by the time the troops came from Russia those on the spot had been conveyed, so that the line was by then in a condition to do its work in a satisfactory manner.

2. The Shilka is navigable from the middle of April to the beginning of October, that is, some five months, but not continuously, as the water is often too low at the portages. Between Strietensk and Pokrovka, a distance of some 233 miles, there are 70 of these, the most difficult being that of Ulepgichensk, where there are only 1½ feet of water, excluding even the most light-draught boats, and recourse has there to be had to rafts. The interruptions are most frequent in June and July. Besides this, steamers of 3-foot draught can often not get up to Strietensk, and their cargoes have to be transhipped at Pokrovka.

At the moment of mobilisation the river was very low, and traffic had been stopped since 25th May, so that 8,000 recruits and 10,000 emigrants were crowded together at Strietensk, waiting to go eastward. Happily by the end of June the water rose somewhat, and still more by the end of July, so that in August the delay could be fairly well made up. In order to prevent its recurrence a quantity of rafts and barges were constructed by Colonel Zakharov, in charge of the communications, and in some two months 115 of the former and 107 of the latter were completed, and many of them despatched, the numbers carried being:—

	On Rafts.	In Barges.
Officers	10	105
Rank and File	1,500	14,000
Horses	850	4,800
Stores	1,000 ewt.	12,000 ewt.

The speed was from 17 to 24 miles a day. So that Pokrovka could be reached in six to seven days, but for want of skill in piloting and the delays at the shallows in portaging. During the period of increased activity there were despatched from Strietensk 147 steamers and 36 large boats, carrying: men, 40,000; horses, 5,500; stores, 500,000 poods, or 7,937 tons.

3. Transit over the ice begins in November and comes to an end in March, thus lasting some five months. No recourse was had to this route, owing to the short time the operations lasted and also the change in their direction.

4. This track is useless in October and April, *i.e.*, when the ice is coming down in autumn and spring. It is long, toilsome, and difficult,

and is mainly used by the post and such wayfarers as cannot wait till one of the other routes is open. As the navigability of the rivers is dependent on the heaviness of the rains, it has all the same to be often used in summer-time. Strictly speaking, there is no *uninterrupted* means of communication between Russia and the Far East. The direct route was turned aside to run through Manchuria to Nikolsk-Ussuriiski, a road available for wheeled vehicles was planned, especially for military and goods traffic, but nothing had been done when war broke out, and urgent need was felt for a route along the banks of the Shilka. The Amur, into which both it and the Argune flow, is consequently seldom low enough to prevent navigation, rarely sinking at any point below 3 feet. It was therefore determined to enlarge and improve the mule track so as to admit of the passage of horse and foot in light marching order. The whole local Cossack population was called out for the purpose, and labourers hired at Strietensk. The work was completed for a distance of 80 miles from that place on the 28th July, but it was found that it would be very bad going for troops. There were, strictly speaking, two tracks available, but for various reasons it was decided to adhere to the lower, and construct a temporary road along it, and by the end of September it was available for mounted men as far as Pokrovka.

5. The chief thing to be done on this route was to repair old bridges and construct new ones. It was also determined to erect dépôts along it, the distance to be covered being some 167 miles, but the change of the direction of operations led to this intention being abandoned. The work was begun in July and completed in October. During July and August the road was used to forward troops to guard the line of the Argune and to occupy Khailar, and for the advance on Tsitsikar. It is only of local importance.

There was, of course, an extraordinary stir in the town during the period, and prices rose to a most exorbitant amount, with the single exception of bread, which remained at 5 kopecks a pound. The one trade which did not prosper was that in intoxicating liquors, the sale of which was strictly forbidden. Consequently there was no disorder or confusion whatever, and the heavy work needed was carried out quietly, without a hitch or the usual objurgations. Whether Strietensk will play an equally important part in future campaigns is a question decided in the negative by the abandonment of the proposed railway line along the Rivers Shilka and Amur and from thence to Tsarukhaitui. The distances are so great in these boundless tracts of country, being measured by thousands of miles, that even when operations are removed moderately far from lines of railway, the latter must still be of primary importance as means of transit. The distance from Kitaiski Razyezd to Vladivostok via Sibir, Tsitsikar, and Nikolsk-Ussuriiski is 1,267 miles, which at a mean

speed of 13 to 14 miles an hour can be traversed in 95 hours, say, four days and nights. By the present line the stages and times are as follows :—

		Miles.	Hours.
Kitaiski to Strietensk	-	167	12
Strietensk to Pokrovka	-	240	48
Pokrovka to Blagovestchensk	-	523	106
Blagovestchensk to Khabarovsk	-	600	120
Khabarovsk to Vladivostok	-	467	35
Total	-	2,000	321

And when navigation is interrupted and troops go by the line formerly proposed, a distance of 1,374 miles at a rate of movement of from 67 to 80 miles a week, from 17 to 20 weeks, or some 5 months, would be required —time enough for a whole campaign. This route might be used as a last resource, or as supplementary, but not otherwise. As regards communication with Russia, time will be saved by taking the route from Blagovestchensk *via* Khabarovsk, Nikolsk-Ussuriiski, and the Manchurian line ; but, on the other hand, in coming *from* Russia it will be quicker to go by Strietensk, provided that the Shilka is high enough and there is no occasion to wait a week or more for the departure of the mail and passenger boat. But this estimate would only hold in summer, and in winter it would be more advantageous to go from Blagovestchensk to Tsitsikar, as it is to be presumed that when the Manchurian line is finished, a road for wheeled traffic will be run between those two places rather than along the whole course of the Amur. That region is throughout rich in means of communication by water, though deficient in land routes. But the track along the river can only be used for two months in the year. Speaking generally, the country is devoid of wheeled vehicles, and in many townships there is not even one of two wheels to carry the crops from the fields, so that they have to lie there till the winter enables the sledges to be used. The number of villages along the Shilka is twenty-two, with 7,405 inhabitants, and along the Amur sixty-two, with 21,313 inhabitants ; the only town is Blagovestchensk, which has 35,000 population. No great expenditure is likely to be incurred in the matter, for no object of great national importance is to be thereby obtained. There are many places in Russia proper where there is no communication for six whole months, instead of two as here. The day of Strietensk may, therefore, be considered to be past, although in recent events it played no inconsiderable part.

NAVAL NOTES.

HOMER.—The following are the principal appointments which have been made : Captains—C. G. Robinson to be Commodore of the Second Class in charge of Hong-Kong Dockyard ; G. M. Henderson to "Irresistible" ; C. H. Adair to "Wildfire" for Sheerness Gunnery School : H. B. Jackson to be Assistant-Director of Naval Ordnance ; G. Le C. Egerton, C.B., to "Vernon" ; R. S. D. Cumming to "Galatea" ; C. E. Anson re-appointed to "Anson" ; the Hon. W. G. Stopford to "Ramilies." Commanders—F. C. Learmouth to "Goldfinch" ; R. S. Phipps-Hornby to "Pylades" ; F. C. T. Tudor to "Prometheus" ; B. J. D. Yelverton to "St. Vincent" ; R. H. Travers to "Hotspur" ; G. Couper to "Basilisk."

Rear-Admiral Sir Baldwin Wake Walker, Bart., C.M.G., hoisted his flag on board the first-class battle-ship "Resolution," at Holyhead, on the 10th inst., as Second-in-Command of the Reserve Squadron during its forthcoming cruise. The first-class cruiser "Grafton" commissioned at Chatham on the 14th ult., to relieve the belted cruiser "Warspite" as flag-ship in the Pacific, and left on the 27th ult. for her station. The second-class cruiser "Dido," recently arrived from China, paid off on the 11th ult. at Chatham, and her sister ship, the "Isis," also from the same station, paid off at the same port on the 18th ult. The first-class battle-ship "Barfleur," lately flag-ship of the Rear-Admiral Second-in-Command in China, paid off on the 21st ult. at Devonport, and the new sloop "Espiegle" commissioned at Sheerness on the same day for China. The old special-service vessel "Cockatrice," which for many years has been the *stationnaire* in the Danube arrived at Devonport from the Mediterranean and will pay off at Chatham. The new first-class battle-ship "Irresistible" commissioned at Devonport on the 4th inst. for service in the Mediterranean, where she will take the place of the old second-class battle-ship "Devastation" as port-guardship at Gibraltar. The sloop "Melita" paid off at Devonport from the Mediterranean on the 17th ult.

Steam Trials.—The "Bacchante."—The new first-class cruiser "Bacchante," which was built by Messrs. J. G. Brown & Co., Clydebank, has completed her trials successfully. The first trial was a 30 hours' coal-consumption one at 4,500-I.H.P. The details are as under:—Draught of water, forward 26 feet 4 inches, aft 26 feet 10 inches ; speed of ship, 13·6 knots by log : steam pressure in boilers, 213 lbs. per square inch ; vacuum in condensers, starboard 27 inches, port 27 inches : revolutions per minute, starboard 75, port 75·4 : mean I.H.P., starboard 2,335, port 2,289—grand total 4,624. The consumption of coal was 250,345 lbs., which works out at 1·80 lbs. per I.H.P. per hour. The second and more important trial was a 30 hours' test at 16,000-I.H.P. The weather was moderately good, but after running for 29 $\frac{1}{2}$ hours the vessel ran into a thick bank of fog, and it was decided to stop the trial, the results being taken for 29 hours. These were as under:—Draught of water, forward 25 feet 9 inches, aft 26 feet 9 inches ; speed of ship, 20·6 knots ; steam pressure in boilers, 256 lbs. per square inch ; vacuum in condensers, starboard 26·7, port 27·5 : revolutions per minute, starboard 112·2, port 113·2 ; total I.H.P., 16,445. The coal consumption was 837,168 lbs., which represents 1·75 lbs. per I.H.P. per hour. The trials were considered satisfactory in every respect. Throughout the machinery worked very smoothly, and there was not the slightest hitch.

The first full-power trial (21,000-I.H.P.), however, did not succeed, owing to heated bearings, and the vessel had to return to Sheerness to coal and remedy defects. But the second attempt proved successful, and throughout the vessel behaved admirably, while the machinery worked smoothly and there was an absence of priming. The results were as follows:—Draught of water, forward 25 feet 9 inches, aft 26 feet 9 inches; speed of ship, 21·7 knots; steam pressure in boilers, 285 lbs. per square inch; vacuum in condensers, starboard 26·5, port 26·5; revolutions per minute, starboard 119·5, port 120·4; mean L.H.P., starboard 10,812, port 10,708—grand total, 21,520. The coal consumption was 292,800 lbs., which represents 1·70 lb. per I.H.P. per hour, as against 1·75 lbs. at 16,000-I.H.P.

The "Hogue."—The following account of the steam trials of the new first-class armoured cruiser "Hogue" have been furnished by Messrs. Vickers, Sons & Maxim:—

The trials of the "Hogue" were carried out in an exceptionally short period, not the slightest hitch interfering with the programme originally drawn up by the Admiralty, and she experienced sufficiently rough weather to establish her steadiness as a gun platform under adverse conditions. On the full-power trial the mean speed of four runs between the Lizard and Dodmans Point was 22·06 knots, the speed on the four runs being respectively 21·8 knots, 22·2 knots, 21·5 knots, and 22·75 knots, while the designed speed was only 21 knots. The maximum power was 22,154-I.H.P., and the mean on the four runs 21,432, while the contract called for 21,000-I.H.P. The results, therefore, are eminently satisfactory. On the trial of 30 hours' duration, at what is termed the continuous steaming power, that at which the vessel must go as long as her coal lasts, the speed was 20·15 knots for 16,456-I.H.P., while at one-fifth power, the ordinary cruising condition, the speed was 13 knots for 4,738-I.H.P. We tabulate the full results of all three trials:—

		30 Hours' Trial.	30 Hours' Trial.	8 Hours' Trial.
Boiler pressure ...	... ... ... ...	199 lbs.	—	285 lbs.
Engine pressure...	... ... ... ...	179 lbs.	223 lbs.	221 lbs.
Cut-off in H.P. cylinder	... ... ... ...	30 per cent.	—	78·7 per cent.
Mean vacuum ...	... ... ... ...	27·1 inches	25·6 inches.	25 inches
Revolutions, starboard	... ... ... ...	74·8	113·1	123·6
Revolutions, port	... ... ... ...	74·6	111·6	121·4
L.H.P., starboard	... ... ... ...	2,331	8,130	10,586
L.H.P., port	... ... ... ...	2,407	8,317	10,746
Collective L.H.P.	... ... ... ...	4,738	16,456	21,432
Speed of ship ...	... ... ... ...	13 knots	20·15 knots	22·06 knots
Coal consumption	... ... ... ...	2·09 lbs.	2·05 lbs.	2·06 lbs.

The trials, it should be stated, were carried out with a close approximation to service conditions. The coal was not hand-picked, nor were the stokers specially-trained men.

The "Hogue" is an armoured cruiser of 12,000 tons displacement at 26 feet 3 inches draught, her length being 440 feet, and her beam 69 feet 6 inches. She has 6-inch armour on her broadside, and her armament includes two 9·2-inch breech-loading guns, with twelve 6-inch Q.F., and seventeen smaller weapons. The Vickers mountings for 9·2-inch guns have in their trials enabled five rounds (380 lbs.) per minute to be fired. The machinery of the "Hogue" is of the twin-screw triple-expansion type, each set having four cylinders, respectively 36 inches, 59·5-inches, and two at 68 inches in diameter, all having a stroke of 48 inches. The thirty water-tube boilers have an

aggregate grate area of 1,650 square feet, and a heating surface of 51,500 square feet, and on trial the power was equal to practically 12-I.H.P. per ton of machinery.

The new sloop "Fantôme" has completed her trials successfully. At her 30 hours' run at three-fourteenths of her power the following results were obtained :—Pressure of steam in boilers, 180 lbs.; ditto at engines, 177 lbs.; vacuum, starboard 29·5 inches, port 28 inches; revolutions, starboard 127, port 125; I.H.P., 339; speed, 9·4 knots; coal consumption, 1·71 lbs. per I.H.P. per hour. At the 30 hours' trial at four-fifths of her full power the results were :—Pressure of steam in boilers, 216 lbs.; ditto at engine, 209 lbs.; vacuum, starboard 27·7 inches, port 27·2 inches; revolutions, starboard 178·9, port 175·6; I.H.P., starboard, high 158, intermediate 170, low 183; port, high 165, intermediate 167, low 177—total I.H.P., 1,020; speed, 12·5 knots; coal consumption, 1·54 lbs. per I.H.P. per hour. At the full-power 8 hours' run the results were :—Pressure of steam in boilers, 218 lbs.; ditto at engines, 203 lbs.; vacuum, starboard 27·6 inches, port 26·6 inches; revolutions, starboard 200·9, port 198·8; I.H.P., starboard, high 219, intermediate 244, low 267, port high 230, intermediate 238, low 255—total I.H.P., 1,453; speed, 13·63 knots; coal consumption, 1·54 lbs. per I.H.P. per hour.

Armour Plate Trials.—At Whale Island, last month, a sample 2-inch plate, manufactured by Messrs. Cammell & Co., of Sheffield, of the type used in gun shields and in continuation of the armour of some of the new battle-ships and armoured cruisers from the belt to the ram, was tested under the usual conditions. Three rounds were fired from 6-pounder Q.F. gun, and each shot, which was fired at a velocity of 1,700 foot-seconds, splashed on the plate, but there was neither crack nor penetration. The plate was then subjected to a more severe test, one round being fired from a 4-inch Q.F. gun at a velocity of 1,650 foot-seconds. Again the shot splashed on the surface, causing neither crack nor penetration, but it set up a slight bulge, which indicated a satisfactory degree of elasticity. The whole of the armour of the battle-ship "Queen" is being manufactured by Messrs. Cammell & Co.

Some trials also took place of some 1-inch plates, manufactured by Messrs. W. Beardmore & Co., of Glasgow, for ships of the "County" class. In each case the shots splashed on the plates, but there was neither cracking nor penetration. The gun used was the 4·7-inch Q.F., firing a 45-lb. projectile with a velocity of 1,665 foot-seconds.

The "Bulwark's" Gun Trials.—The new first-class battle-ship "Bulwark," has successfully undergone a lengthy programme of gunnery and torpedo trials in the Channel. The principal trials were those of the 12-inch (50-ton) breech-loading guns; these guns, of which the vessel carries four—two in each turret—are of the newest type, known as the Mark IX. Six rounds were fired from the fore turret at various degrees of elevation and at bearings ranging from right abeam to right ahead, the right and left guns of the turret being fired alternately for the first four rounds, whilst the last two rounds were fired by both guns simultaneously. The first two rounds were fired with charges of cordite, each weighing 158 lbs., and the remaining rounds with the usual full charge of 211 lbs. of cordite, the projectile in each case weighing 850 lbs. Some of the tests were of an exceptionally severe character, and especially one with a full charge, when the gun was fired at no less than 4° of elevation. With the gun in this position the shock of discharge was very great, and calculated to disclose any weakness in the construction of the vessel or any defect in the turret or its surrounding fittings. The after turret was then subjected to similar trials, and then in turn the Q.F. and machine guns, and the torpedo armament were tested. Before the "Bulwark's" return to harbour a very careful survey was made, and, contrary to former experience, not a single stanchion or frame was found to be in the slightest way crippled; in fact, the

only damage done was the breaking of a few panes of glass in the cabins immediately under the after turret. Her guns alone have cost £67,970, the gun-mountings and turrets £120,000, and the torpedo-tubes £3,200.

The "King Edward VII." Battle-ship.—The new battle-ship "King Edward VII.," which, it is expected, will be laid down on No. 3 slip at Devonport at the end of March, will, like the "Dominion" and "Commonwealth," to be built on the Clyde, be of the "Formidable" design, but of 1,500 tons more displacement (16,500 tons). The engines will be of 18,000-H.P., and capable of developing a speed of 18½ knots. The new class will be protected by 9-inch armour belts from the lower protected deck and on the lower deck to a small length above the water-line, and by 8-inch armour to the main deck. In the armament of the ship a new feature will be introduced, for the plan of placing 6-inch guns in separate casements will be abandoned, and ten 6-inch guns will be enclosed in a battery having 7-inch armour protection. The armament will further be enormously strengthened by the addition of four 9·2-inch guns—the new forward and aft armaments of our latest cruisers—to the four 12-inch 50-ton guns, which are now the normal armament of the most modern battle-ships. These will be protected by from 6 inches to 7 inches of armour. The complement of the "King Edward VII.," if used as flag-ship, will be nearly 1,000 men.

Coaling Statistics.—*The Times* give some interesting details connected with the recent coaling of the four battle-ships forming the Portsmouth Division of the Channel Squadron which was completed on the 28th ult., and while in no case was a high average attained, the operations possessed some novel and interesting features. The "Majestic" shipped Welsh coal only : the "Prince George" and "Mars" took in partly Welsh coal and partly fuel from the Glen Craig Scottish collieries, and the "Hannibal" was supplied solely from the Longrigg Scottish collieries. The colliers that brought the Scottish coal were not selected by the Admiralty and were not adapted for rapid unloading, having been chartered by the colliery managers to suit their own convenience. The "Majestic" coaled on 21st January from two lighters on one side and one on the other from the "Ruby," which has been converted from a corvette into a coal hulk. The "Ruby," with four transporters, supplied 987 tons, and the lighters with two transporters on one and a swinging derrick on the other, supplied 766 tons. So long as the four holds of the "Ruby" could be worked simultaneously she could maintain an average of 81 tons an hour, but two of the holds were worked out sooner than the others, and then the average was considerably reduced. The "Ruby" and the lighters finished about the same time. The coaling was completed in 13 working hours, which gives an average of 134·8 tons an hour. The "Prince George" coaled on the same day, but she took in only 120 tons of Welsh coal, which was lifted on board by the cranes at the coaling station, while on the other side she shipped from a collier, with three holds, 913 tons. For the greater part of the time, therefore, she could coal from one side only, and the average of 12½ working hours gives a mean of 85·5 tons an hour. On 23rd January the "Mars" coaled at the north slip, receiving 487 tons from a collier and 516 tons from lighters. She was thus able to ship from both sides during the greater part of the operation, and the average quantity taken in during 8·916 working hours was 112·5 tons per hour. On 27th January the "Hannibal" shipped 941 tons, all Scottish coal, from one collier, and, therefore, the whole had to be taken in at one side. The average of 14·733 hours was 64 tons an hour. During the afternoon the after donkey-engine broke down and could not be worked for an hour, but the time is not eliminated, as the vessel continued to coal from the fore hold, which was emptied at 10.45 p.m., whereas the clearing of the after-hold was

not emptied until 12.30 the next morning. The experiment demonstrated the necessity of specially fitted colliers with four holds, all readily accessible, if the coaling of war-ships is to be rapidly carried out.

Return of Courts-Martial.—A Parliamentary paper (Cd. 752) was issued recently giving returns of the number of courts-martial held and summary punishments inflicted on seamen of the Royal Navy, etc., during the year 1900. The first return deals with petty officers and men, boys in the Royal Navy, and Marines afloat. It states that the number of courts-martial during the year was 297, and the number of persons tried 307. The total number of offences committed was 614. There were 25 cases of desertion, 171 of striking and attempting to strike a superior officer, 29 of using threatening language to a superior officer, 79 of wilful disobedience, 71 of behaving with contempt to a superior officer, and 102 of theft and embezzlement, as well as 67 acts to the prejudice of good order and naval discipline. 300 punishments were inflicted. In seven cases the punishment was penal servitude, in 125 cases imprisonment and dismissal with or without disgrace, in 152 cases imprisonment with hard labour, and in 9 cases birching with imprisonment. The number of summary punishments during the year was 109,323. In 315 of the cases corporal punishment with the birch was inflicted on boys. There were four cases in which men were discharged with disgrace. Imprisonment was inflicted in 3,586 cases, and minor punishments in 97,035 cases. The second return relates to the men of the Royal Marines serving at headquarters and the Dépôt Royal Marines, Deal. The total number of courts-martial was 281. There were 409 offences, including 55 cases of desertion, 62 of violence to a superior or insubordination, 19 of disobedience, 5 of drunk under arms, 7 of drunkenness, 69 of making away with necessaries, and 28 of fraudulent enlistment. The number of punishments inflicted was 274. In one case the punishment was penal servitude, in 19 reduction to the ranks or to a lower grade, and in 226 imprisonment with or without hard labour. One man was reduced to the ranks and imprisoned and 27 were discharged with ignominy. There were 139 cases in which fines were inflicted for drunkenness, the total number of men fined being 100. The number of minor punishments, including fines for drunkenness, was 2,618. The figures for the past ten years are also given in the returns for purposes of comparison.

The Naval Brigade in China.—The following return, showing the strength of the naval force employed in operations on shore and afloat in China, and the casualties incurred during 1900, was issued recently as a Parliamentary paper, asked for by Sir John Colomb:—

Nature of Service.	Number Landed.		Killed.		Died of Wounds.		Dd. from Disease.		Total Deaths.		Woun'd.		Approximate Number of Days A-store.
	Officers	Men.	Officers	Men.	Officers	Men.	Officers	Men.	Officers	Men.	Officers	Men.	
Legations at Peking ...	5	79	—	2	1	1	—	2	1	5	2	18	99
Seymour's Relief Column ...	67	816	1	26	2	7	—	—	3	33	9	97	17
Defence of Tientsin ...	146	1,695	—	22	1	4	2	8	3	34	2	132	35
Tientsin Relief Force ...	—	—	—	—	—	—	—	—	—	—	—	—	—
Bombardment of Taku Forts by Algerine, Phenix, Fame, Whiting	16*	217*	—	—	—	—	—	1*	—	1*	—	7*	1*
Various duties at Taku, Tong-ku, and Tsin-ho ...	29	341	—	1	—	—	—	—	—	1	—	8	Unknown
Final Peking Relief ...	35	519	—	—	—	—	—	10	—	10	—	1	39
Totals† ...	167	2,040	1	51	4	12	2	20	7	83	13	256	—

* These officers and men, although actively engaged, were not landed, with the exception of three officers.

† The totals given are the net totals, many of the officers and men having been engaged upon more than one of the services enumerated above.

Summary, Distinguishing Various Branches.

	Number Landed.	Killed.	Died of Wounds.	Dd. from Disease.	Total Deaths.	Woun'd.
	Officers. Men.	Officers. Men.	Officers. Men.	Officers. Men.	Officers. Men.	Officers. Men.
Executive...	124 1,090	— 25	1 9	2 3	3 37	10 147
Royal Navy: Engineer ...	8 296	— 4	— 2	— 2	— 8	— 27
Civil ...	22 109	— 1	— —	— 1	— 2	1 3
Royal Marine Artillery ...	12 69	— 2	3 —	— 1	3 3	2 6
Royal Marine Light Infantry ...	1 476	1 19	— 1	— 13	— 33	— 73
Totals ...	167 2,040	1 51	4 12	2 20	7 83	13 265

[†] The casualties among the crews engaged in the bombardment of the Taku Forts are not included in the summary, as they were not landed.—*Times and Naval and Military Record.*

GENERAL.

The war-ships, exclusive of torpedo-boats, launched during the year for the various Navies, with their tonnage, I.H.P., and estimated speed, were as follows :—

Great Britain.—First-class battle-ships :—“ Albemarle,” “ Cornwallis,” “ Duncan,” “ Exmouth,” “ Montagu,” “ Russell,” all of 14,000 tons, 18,000-I.H.P., and 19 knots speed. First-class armoured cruisers :—“ Drake,” “ Good Hope,” “ King Edward,” “ Leviathan,” of 14,100 tons, 30,000-I.H.P., and 23 knots speed; “ Bacchante,” “ Euryalus,” of 12,000 tons, 21,000-I.H.P., and 21 knots speed; “ Bedford,” “ Essex,” “ Kent,” “ Monmouth,” of 9,800 tons, 22,000-I.H.P., and 23 knots speed. Sloops :—“ Fantome,” “ Odin,” “ Merlin,” of 1,070 tons, 14,000-I.H.P., and 13·5 knots. River gun-boats :—“ Moorhen,” “ Teal,” of 180 tons, 800-I.H.P., and 13 knots speed. Torpedo-boat destroyers :—“ Roebuck,” “ Success,” of 360 tons, 6,000-I.H.P., and 30 knots speed; “ Arab,” of 430 tons, 8,600-I.H.P., and 32 knots speed. Submarine-boat :—One, not named.

Austria-Hungary.—Second-class battle-ship:—"Arpad," of 8,340 tons, 11,900-L.H.P., and 18 knots speed.

France.—First-class armoured cruisers:—"Léon Gambetta," of 12,550 tons, 27,500-I.H.P., and 22 knots speed; "Dupetit-Thouars," of 9,517 tons, 19,600-I.H.P., and 21 knots; "Desaix," of 7,700 tons, 17,100-I.H.P., and 21 knots speed. Torpedo-boat destroyers:—"Rapière," "Pertuisane," "Flamberge," "Escopette," of 303 tons, 1,800-I.H.P., and 26 knots speed. Submarine-boats:—"Guône," "Korrigan," "Lutin," "Farfadet," of 185 tons; "Silure," "Français," "Algérien," "Espadon," of 146 tons; "Sirène," "Triton," of 106 tons.

Germany. — First-class battle-ships: — "Mecklenburg," "Wettin," "Zähringen," "Schwaben," of 11,900 tons, 14,000-I.H.P., and 18 knots speed. First-class armoured cruiser: — "Prinz Adalbert," of 9,000 tons, 16,000-I.H.P., and 21 knots speed. Torpedo-boat destroyers: — Six, not named, of 350 tons, 6,000-I.H.P., and 27 knots speed.

Italy.—First-class battle-ships:—"Regina Margherita," "Benedetto Brin," of 13,500 tons, 19,000-L.H.P., and 20 knots speed. Torpedo-boat destroyers:—"Nembro," "Ostro," of 330 tons, 6,000-L.H.P., and 30 knots speed.

Japan.—Torpedo-boat destroyer:—"Schirakumo," of 320 tons, 5,700-I.H.P., and 30 knots speed.

The Netherlands.—Third-class battle-ship :—"De Ruyter," of 4,950 tons, 6,000-I.H.P. and 16 knots speed.

Portugal.—First-class torpedo-gunboat :—“Tejo,” of 530 tons, 7,000-I.H.P., and 25 knots speed.

Russia.—First-class battle-ships :—“Borodino,” “Imperator Alexander III,” of 13,600 tons, 16,300-I.H.P., and 18 knots speed ; “Cesarevich,” of 12,700 tons, 16,000-I.H.P., and 18 knots speed. First-class armoured cruiser :—“Bogatyr,” of 6,750 tons, 19,500-I.H.P., and 23 knots speed. First-class cruiser :—“Ochakov,” of 6,250 tons, 19,500-I.H.P., and 23 knots speed. Torpedo-boat destroyers :—“Gagara,” “Sowa,” “Voron,” of 220 tons, 3,800-I.H.P., and 27 knots speed ; “Losos,” of 312 tons, 4,750-I.H.P., and 26 knots speed.

Sweden.—Coast-defence battle-ships :—“Aran,” “Wasa,” “Taperhefen,” of 3,650 tons, 5,500-I.H.P., and 17 knots speed.

United States.—First-class battle-ships :—“Maine,” “Ohio,” “Missouri,” of 12,300 tons, 16,000-I.H.P., and 18 knots speed. Third-class cruisers :—“Cleveland,” “Des Moines,” of 3,200 tons, 4,700-I.H.P., and 16 knots speed. Torpedo-boat destroyers :—“Preble,” of 420 tons, 7,000-I.H.P., and 29 knots speed ; “Bainbridge,” “Chauncey,” of 420 tons, 8,000-I.H.P., and 29 knots speed ; “Whipple,” of 433 tons, 8,300-I.H.P., and 29 knots speed. Submarine boats :—“Adder,” “Mocassin,” “Pike,” “Porpoise,” “Shark,” “Fulton,” of 120 tons.

FRANCE.—The following are the principal appointments which have been made : Capitaines de Vaisseau—A. R. C. Raffenel to “Amiral-Charner” ; M. J. C. Aubert to “Jauréguiberry” ; A. J. Barry to “Tage.” Capitaines de Frégate—E. M. Amelot, F. A. V. Journet, D. M. Bonifoy, A. J. Barry, L. H. Dufaure de Lajarte to Capitaines de Vaisseau.—*Le Journal Officiel de la République Française*.

It is reported that Vice-Admiral the Marquise de Courthille, at present commanding the Northern Squadron, will command the squadron which is to escort the President of the Republic, should his return visit to the Tsar be carried out this year ; it will be the second time this honour will have fallen to him, for as a rear-admiral he commanded the squadron which escorted the late President (M. Faure) to Russia. It was at first believed that M. Louvet would have made the passage on board the “Masséna,” Vice-Admiral Courthille’s flag-ship, but it is now stated that the new first-class battleship “Iéna” will be the ship selected to convey the President. Rear-Admiral Caillard, who has been succeeded in the command of the Light Division of the Mediterranean Active Squadron by Rear-Admiral Boutet, has been appointed to the command of the Algerian Naval Division, where he succeeds Vice-Admiral Courrejolles on his promotion to that rank. Rear-Admiral Jauréguiberry has taken over the duties of Chief of the Staff at Toulon, and Rear-Admiral Borel de Bretzel has done the same at Cherbourg. Vice-Admiral Bienaimé has been selected to succeed the late Vice-Admiral de la Bedollière as Maritime Prefect at Lorient.

The first-class battle-ships “Hoche” and “Carnot,” in the Reserve at Toulon, have taken temporarily the place in the Active Squadron of the “Gaulois” and “Bouvet,” which are in the dockyard hands. The crews of the “Hoche” and “Carnot” have been completed to sea-effective from the “Gaulois” and “Bouvet.” The first-class armoured cruiser “Latouche-Tréville” is to be attached to the gunnery school at Toulon as a sea-going tender. The second-class battle-ship “Redoutable,” which was under orders to return to France, from China, is now to remain on the station, and she will carry the flag of Vice-Admiral Pottier’s successor. The new first-class armoured

cruiser "Montcalm," which is to relieve the "Dupuy de Lôme" in the Northern Squadron, is to form part of the division which is to escort the President of the Republic to Russia in the spring. Orders have also been given to hurry on the repairs of the cruisers "Bruix" and "Guichen," which are to accompany her. It is further reported that the "Montcalm," will be selected to proceed to Portsmouth to represent France at the fêtes there, in connection with the coronation of King Edward. The old gun-boat "Capricorne" has been commissioned at Brest and proceeds to the Indian Ocean, where she will relieve the "Scorpion," a vessel of the same class, which will return to Lorient to pay off.

Steam Trials and Dockyard Notes.—Cherbourg.—The reconstructed coast-defence battle-ship "Requin" has completed her trials successfully : with ten of her twelve Niclausse boilers alight; which have been substituted for her old cylindrical ones, the engines developed 6,230-I.H.P., 230-H.P. over the contract, giving a speed of 15 knots, with a coal consumption of 720 gs. per H.P. per hour. At her full-speed trial the engines developed 6,350-I.H.P., which gave a speed of 15·3 knots ; at a coal-consumption trial, with the engines developing 4,721-I.H.P., a speed of 13 knots was obtained, with a coal consumption of 692 gs. per H.P. per hour. The "Requin" is to proceed to Toulon, when she will

be placed in the Second Category of the Reserve, with her three sister ships, the "Indomptable," "Caiman," and "Terrible" : as soon as the new arsenal at Biserta is more advanced, these four ships, all of which have now been reconstructed and modernised, as far as possible, are to be permanently stationed at that port.

The new second-class battle-ship "Henri IV," has at last been commissioned for her trials : she was laid down more than four and a half years ago, and launched in August, 1893. She is a low free-board ship, with, however, a long high forecastle for steaming against a head sea, and as the French naval authorities hope that she may prove the forerunner of a useful type, it may be as well again to briefly recapitulate her principal characteristics :—Length, 354 feet (all over), 325 feet between the perpendiculars ; beam, 73 feet ; displacement, 8,948 tons, with a maximum draught of 23 feet. The peculiar feature of the ship, new so far in the French Navy, although it is to be found in our own "Inflexible," "Colossus," "Edinburgh," etc., is that the sides directly they leave the immediate bow no longer follow the water-line, but a straight line fore and aft inboard, forming a narrow superstructure as compared with the full beam of the ship. From where the forecastle ceases the free-board of the "Henri IV," is very small, especially aft, where it is only 4 feet out of the water. Protection is afforded by a complete water-line belt of hard steel, except for a few feet right aft, where a bulkhead athwartship takes the place of the side armour, following the sharp V-shape of the stern ; the thickness of the belt tapers from 11·8 inches amidships to 7 inches at the extremities, and is 7 feet deep, reaching 3 feet below and 4 feet above the water. Above the water-line belt is another of 4-inch armour extending from the stem to some 30 feet abaft the central line of the ship, while above this belt again amidships is a central redoubt protected by 4-inch steel armour, in which four of the guns of the secondary armament are mounted ; while the turrets for the heavy guns, one forward and one aft, are protected by 9·5-inch steel armour, the bases by 12-inch, and the supporting tubes, which extend to the belt, 9·5-inch. The armoured deck is 2·2 inches thick, and there is a curved 1-inch armoured deck below this again. The armament consists of two 27·4 cm. (10·8-inch) guns, one in each turret, with 11·8-inch steel hoods, and seven 13·8 cm. (5·5-inch) Q.F. guns, of which four are mounted in the lower redoubt, two immediately above protected by shields, one each side, and the seventh in a small turret aft on the upper deck ; twelve 3-pounders are also distributed over the

superstructure. All the turrets and ammunition hoists can be worked by hand or electricity.

The engines, to develop 12,000-I.H.P., are expected to give a speed of 17 knots the boilers being Niclausse water-tube. The normal coal supply will be 725 tons, but, if necessary, 1,100 can be carried, which will give the ship a radius of action of 7,500 miles at 10 knots speed.

The new torpilleur-de-haute-mer "Rafale" has arrived from Havre, where she was built by the Normand firm, and will shortly commence her trials. A sister vessel, the "Bourrasque," has been very successful on her trials; she has made several runs at 30·8 knots speed, and on her final full-speed trial, with the engines making 347 revolutions, she attained a speed on the measured mile of 31·5 knots, although the contract only provided for a speed of between 29 and 30 knots. The "Typhon," of a somewhat smaller type, has also completed her trials, making 27·7 knots, with 349 revolutions, or ·7 over the contract speed. All the boats built by the Normand firm during the last twenty years have been distinguished for the solidity and excellence of the work expended upon them, the machinery in particular, even of the earliest boats, still being in excellent condition.

The torpedo-aviso "Épervier," which has been for some time past in the dockyard hands, having her boilers changed, is to be ready for her trials this spring: she is being fitted with cylindrical boilers of a type similar to her old ones.

The new first-class armoured cruiser "Jules Ferry" has been laid down upon the new slip at Galet, but it is very uncertain if she will be launched this year.

A station for submarine boats under the command of a capitaine de frégate has been established here, and four submarines in commission, viz., the "Morse," "Français," "Algérien," and "Norval," with four on trial, viz., the "Silure," "Sirène," "Triton," and "Espadon," have been placed under his orders.

Brest.—The Minister of Marine has given directions that the old wooden cruisers "Iphigénie," "Duquesne," and "Tourville" should be struck off the effective list, and they are to be converted into fleet-colliers. It is of interest to recall that in the autumn of 1898, when the Fashoda crisis began to look serious, preparations were made to arm the new first-class battle-ships "Charlemagne" and "Gaulois," then all complete but for their guns, with the guns from the "Duquesne" and "Tourville," and use the ships as armoured cruisers.

Good progress is being made with the new first-class battle-ship "République," which, although only commenced some three weeks ago, is already beginning to take shape; it is hoped that she will be far enough advanced to be launched some time in the late autumn. Work is also proceeding actively with the new first-class armoured cruiser "Marseillaise," which was launched some months ago: her machinery is all set up, and the turrets for her two 19·4-cm. (7·6-inch) guns, and the smaller turrets on the upper deck for four of her 16·4-cm. (6·5-inch) Q.F. guns are completed and the guns mounted, but the armoured casemates on the lower and main decks for her remaining 16·4-cm. guns are not yet finished. Work is also proceeding rapidly with the larger armoured cruiser "Léon Gambetta," which was only launched in October last.

The commissioning of the new first-class battle-ship "Iéna" has been postponed. On the 11th ult. she went out in order to carry out the trials of her 12-inch guns. Everything worked well until the fourth trial, in which the two 12-inch guns were fired off together, with the result that the elevating gear of one of the guns broke, and the trials had to be discontinued. It is said that the repairs will take a month, and it is quite possible that the whole mechanism of the heavy guns will be changed. The "Iéna" had already undergone the trial of her boilers and machinery in a

cruiser "Montcalm," which is to relieve the "Dupuy de Lôme" in the Northern Squadron, is to form part of the division which is to escort the President of the Republic to Russia in the spring. Orders have also been given to hurry on the repairs of the cruisers "Bruix" and "Guichen," which are to accompany her. It is further reported that the "Montcalm," will be selected to proceed to Portsmouth to represent France at the fêtes there, in connection with the coronation of King Edward. The old gun-boat "Capricorne" has been commissioned at Brest and proceeds to the Indian Ocean, where she will relieve the "Scorpion," a vessel of the same class, which will return to Lorient to pay off.

Steam Trials and Dockyard Notes.—Cherbourg.—The reconstructed coast-defence battle-ship "Requin" has completed her trials successfully; with ten of her twelve Nielausse boilers alight; which have been substituted for her old cylindrical ones, the engines developed 6,230-I.H.P., 230-H.P. over the contract, giving a speed of 15 knots, with a coal consumption of 720 gs. per H.P. per hour. At her full-speed trial the engines developed 6,359-I.H.P., which gave a speed of 15·3 knots; at a coal-consumption trial, with the engines developing 4,721-I.H.P., a speed of 13 knots was obtained, with a coal consumption of 692 gs. per H.P. per hour. The "Requin" is to proceed to Toulon, when she will

placed in the Second Category of the Reserve, with her three sister ships, the "Indomptable," "Caïman," and "Terrible"; as soon as the new arsenal at Biserta is more advanced, these four ships, all of which have now been reconstructed and modernised, as far as possible, are to be permanently stationed at that port.

The new second-class battle-ship "Henri IV," has at last been commissioned for her trials: she was laid down more than four and a half years ago, and launched in August, 1899. She is a low free-board ship, with, however, a long high forecastle for steaming against a head sea, and as the French naval authorities hope that she may prove the forerunner of a useful type, it may be as well again to briefly recapitulate her principal characteristics:—Length, 354 feet (all over), 325 feet between the perpendiculars: beam, 73 feet: displacement, 8,948 tons, with a maximum draught of 23 feet. The peculiar feature of the ship, new so far in the French Navy, although it is to be found in our own "Inflexible," "Colossus," "Edinburgh," etc., is that the sides directly they leave the immediate bow no longer follow the water-line, but a straight line fore and aft inboard, forming a narrow superstructure as compared with the full beam of the ship. From where the forecastle ceases the free-board of the "Henri IV," is very small, especially aft, where it is only 4 feet out of the water. Protection is afforded by a complete water-line belt of hard steel, except for a few feet right aft, where a bulkhead athwartship takes the place of the side armour, following the sharp V-shape of the stern; the thickness of the belt tapers from 11·8 inches amidships to 7 inches at the extremities, and is 7 feet deep, reaching 3 feet below and 4 feet above the water. Above the water-line belt is another of 4-inch armour extending from the stem to some 30 feet abaft the central line of the ship, while above this belt again amidships is a central redoubt protected by 4-inch steel armour, in which four of the guns of the secondary armament are mounted; while the turrets for the heavy guns, one forward and one aft, are protected by 9·5-inch steel armour, the bases by 12-inch, and the supporting tubes, which extend to the belt, 9·5-inch. The armoured deck is 2·2 inches thick, and there is a curved 1-inch armoured deck below this again. The armament consists of two 27·4 cm. (10·8-inch) guns, one in each turret, with 11·8-inch steel hoods, and seven 13·8 cm. (5·5-inch) Q.F. guns, of which four are mounted in the lower redoubt, two immediately above protected by shields, one each side, and the seventh in a small turret aft on the upper deck; twelve 3-pounders are also distributed over the

superstructure. All the turrets and ammunition hoists can be worked by hand or electricity.

The engines, to develop 12,000-I.H.P., are expected to give a speed of 17 knots the boilers being Niclausse water-tube. The normal coal supply will be 725 tons, but, if necessary, 1,100 can be carried, which will give the ship a radius of action of 7,500 miles at 10 knots speed.

The new *torpilleur-de-haute-mer* "Rafale" has arrived from Havre, where she was built by the Normand firm, and will shortly commence her trials. A sister vessel, the "Bourrasque," has been very successful on her trials; she has made several runs at 30·8 knots speed, and on her final full-speed trial, with the engines making 347 revolutions, she attained a speed on the measured mile of 31·5 knots, although the contract only provided for a speed of between 29 and 30 knots. The "Typhon," of a somewhat smaller type, has also completed her trials, making 27·7 knots, with 349 revolutions, or 7 over the contract speed. All the boats built by the Normand firm during the last twenty years have been distinguished for the solidity and excellence of the work expended upon them, the machinery in particular, even of the earliest boats, still being in excellent condition.

The torpedo-aviso "Épervier," which has been for some time past in the dockyard hands, having her boilers changed, is to be ready for her trials this spring: she is being fitted with cylindrical boilers of a type similar to her old ones.

The new first-class armoured cruiser "Jules Ferry" has been laid down upon the new slip at Galet, but it is very uncertain if she will be launched this year.

A station for submarine boats under the command of a capitaine de frégate has been established here, and four submarines in commission, viz., the "Morse," "Français," "Algérien," and "Norval," with four on trial viz., the "Silure," "Sirène," "Triton," and "Espadon," have been placed under his orders.

Brest.—The Minister of Marine has given directions that the old wooden cruisers "Iphigénie," "Duquesne," and "Tourville" should be struck off the effective list, and they are to be converted into fleet-colliers. It is of interest to recall that in the autumn of 1898, when the Fashoda crisis began to look serious, preparations were made to arm the new first-class battle-ships "Charlemagne" and "Gaulois," then all complete but for their guns, with the guns from the "Duquesne" and "Tourville," and use the ships as armoured cruisers.

Good progress is being made with the new first-class battle-ship "République," which, although only commenced some three weeks ago, is already beginning to take shape; it is hoped that she will be far enough advanced to be launched some time in the late autumn. Work is also proceeding actively with the new first-class armoured cruiser "Marseillaise," which was launched some months ago: her machinery is all set up, and the turrets for her two 19·4-cm. (7·6-inch) guns, and the smaller turrets on the upper deck for four of her 16·4-cm. (6·5-inch) Q.F. guns are completed and the guns mounted, but the armoured casemates on the lower and main decks for her remaining 16·4-cm. guns are not yet finished. Work is also proceeding rapidly with the larger armoured cruiser "Léon Gambetta," which was only launched in October last.

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satisfactory manner, and would have been commissioned if her gun trials had been equally satisfactory.

The new first-class battle-ship "Suffren" has been trying her engines alongside the yard. Her armament is now all in place, and the ship should soon be ready to commence her regular trials. She is a more effective-looking fighting-ship than any of her predecessors, being in a great measure free from the enormous superstructures which have been one of the weak features of earlier vessels. The disposition of her secondary battery of 6·4-inch Q.F. guns also presents some new features : four are mounted in a casemate on the main deck amidships, protected by 5-inch armour, and firing from angle ports ; the remaining six are mounted on the upper deck in independent turrets : one each side amidships, with an angle of fire from right forward to right aft, and the other four, two forward and two aft, with an arc of fire of 90° from ahead and astern to the beam respectively.

The coast-defence battle-ship "Amiral-Tréhouart" has been ordered to Cherbourg, which will be her port for the future ; with her departure this harbour will be left with only two representative battle-ships of the Northern Squadron, the "Formidable" and "Courbet," neither of which can be counted as first-class ships. The *Yacht*, commenting upon this, says :—"This lack of battle-ships would not matter much, as we recognise the necessity of concentrating our best battle-ships in the Mediterranean, if only in return the number of large cruisers to be stationed here was increased. But, unfortunately, there are no signs of that. The "Dupuy de Lôme" is still lying in the roads, but her boilers are worn out : the "Bruix" is still in dock, so there remains only the third-class cruiser "Surcouf," of little value as a fighting-vessel, and only of use as a despatch-vessel. The value of Brest as an admirable base for cruisers has long been admitted, but there seems no disposition to concentrate them here. It is quite true that the Navy at present has but few cruisers to dispose of, but it would seem reasonable that the "Jurien de la Gravière" and the "Amiral-Gueydon" should be sent here for their trials, as was originally intended, instead of their remaining at Lorient for them, a harbour which, in peace-time, even presents difficulties for the free movements of large ships, while in war it can be easily blockaded, which Brest cannot be."

On the 1st March, the new lighthouse which has been erected on the Vierge Island at the entrance of the channel is to be lit for the first time. The new lighthouse is the highest in France, being 244 feet high, 13 feet higher than the Barfleur one. The light is a white flash every five seconds, and will be visible 39 miles in ordinary weather and 14 in thick : it is not electric, probably to prevent confusion owing to its nearness to Ushant. The work of construction was commenced on the 28th July, 1897, and its completion will add much to the safety of vessels making the dangerous approach to the Channel leading to the harbour.

Lorient.—The new first-class protected cruiser "Jurien de la Gravière" will commission for her trials on the 15th inst. ; although a vessel of only 3,500 tons, she has yet taken more than four years to build, as she was laid down in November, 1897, and launched on the 26th August, 1899. Her machinery is now almost ready, but as at present arranged she will make her first run before April.

Work is proceeding apace with both the new armoured cruisers "Amiral-Gueydon" and "Gloire" : the latter is about to have her armament placed on board, two of her 6·4-inch Q.F. and six of the 3·9-inch Q.F. guns having arrived at the yard, while the former ought to have commenced her trials by this, but it has been found necessary to carry out certain alterations with the view of improving the ventilation of her stoke-holds. Preparations are now well forward for the launch of the first-class armoured cruiser "Condé," which is to take place on the 8th March.

The Minister of Marine has approved of the repairs of the second-class cruiser "Jean Bart" being taken in hand. Her cylindrical boilers are to be replaced by water-tube ones, probably Niclausse, and estimates are to be sent in for replacing her wooden decks with steel ones, as well as the transverse bulkheads of her bunkers, which are in a very bad condition. She is to be ready by next year to relieve her sister ship, the "Isly," as senior officer's ship on the Newfoundland Fisheries, when that ship in her turn will receive new boilers and undergo refit.

Toulon.—The new first-class armoured cruiser "Montcalm" has made another satisfactory 24 hours' trial; with the engines making 115·5 revolutions a mean speed of 18 knots was maintained. The new first-class cruiser "Chateaurenault" has also been making some satisfactory trials with the engines developing from 9,400 to 18,500 I.H.P.; with the latter H.P., the port and starboard engines making 126 revolutions, and the central 112, a speed of 20·8 knots was maintained: the report that the working of one of the cylinders of the central engines was irregular is now contradicted. The ship has now concluded her preliminary trials, and on the completion of her official ones, if satisfactory, she will proceed to Brest, where she will hoist the flag of the rear-admiral commanding the Light Division of the Squadron of the North.

A serious accident occurred on board the first-class battle-ship "Jauréguiberry" on the 22nd ult., while with the squadron in the Gulf of Juan, from the explosion of the air chamber of one of her torpedoes, by which four men were hurt. A torpedo with the air chamber charged to a pressure of 80 atmospheres was being handled in one of the torpedo-rooms, when it burst, the fragments of steel, acting as projectiles, being sent in all directions, the high pressure of the air also occasioning a violent shock: three men in the room were more or less slightly injured, but the fourth had both his thighs broken. This is the second time one of the air chambers of this ship's torpedoes has exploded: on a former occasion it happened as the torpedo was leaving one of the submerged tubes, and a good deal of damage was done to the ship. The torpedo whose air chamber burst on the 22nd was an 18-inch one, and is supposed to be charged to a pressure of 90 atmospheres, before being fired, and to have stood a pressure of 130 atmospheres; but with all proper precautions taken, there should be no danger in handling the torpedo when charged to 90 atmospheres.

Trials of Submarines.—Torpedo attacks were carried out by the submarine boat squadron off Cherbourg, on 7th January, on supposed hostile squadrons coming from the east and west, represented by coast-defence ships "Amiral-Tréhouart" and "Bouvines," and the destroyer "Cassini," which were to endeavour to take up a position outside the breakwater to bombard the arsenal.

The submarines "Morse" and "Narval" were to attack from the direction of Cape La Hogue, and the "Triton" and "Espadon" towards Cape Lévi, while the "Français" was to operate to the north of the breakwater. The attack commenced in the afternoon, when the enemy's ships were about 7 miles distant to the east and west of Cherbourg; to the west the "Narval" and "Morse" watched for the passing of the "Bouvines" and "Cassini," and to the east the "Espadon" and "Triton" awaited the "Amiral-Tréhouart." As the "Triton" was about to fire her torpedo a fishing-boat got in the way, and she was obliged to come to the surface; the "Amiral-Tréhouart" at once perceived her, and opened a heavy fire, which in real warfare should have sunk her: the "Espadon" was, however, more fortunate, and succeeded in firing her torpedo, striking the "Amiral-Tréhouart." On the west the "Morse" was successful in discharging a torpedo at a distance of 90 metres, striking the "Bouvines" full on the port side. The "Cassini," having escaped the "Narval" and "Morse," passed imprudently near the "Français," and was torpedoed by the latter.

Altogether it was considered to be a good day's work for the submarines.

A site for a torpedo and submarine-boat post at Marseilles has been acquired by the Government for a sum of 230,000 francs (£9,200), near the Carenage Basin. Three slips, a coal-shed, and other stores are to be constructed there, and the post will be connected by telephone with neighbouring semaphore stations.—*Le Yacht, Le Moniteur de la Flotte*, and *Le Temps*.

RUSSIA.—The following are the principal appointments which have been made : Captains—Mordovine I. from the cruiser "General-Admiral" to command the 15th Seamen's Division ; Afanasyev I. to the first-class cruiser "Kagul" ; Yurkovski I. to the first-class cruiser "Ochakov" ; Kossovitch from the "Pallada" to 6th Seamen's Division, vice Captain Koroliev ; Ignatius to 8th Seamen's Division and battle-ship "Kniaz Suvorov" ; Arnantov from training-ship "Vierny" to first-class cruiser "General-Admiral."

Steam Trials.—The recent official trials of the new first-class battle-ship "Pobieda" were made at full draught during a six hours' continuous working of the engines. To secure the requisite displacement water ballast was used, giving a draught forward of 25 feet 1 inch and aft of 25 feet 11 inches. With all three engines working and making from 104 to 110 revolutions, the ship made four runs on the mile :—

The 1st run gave a speed of	...	...	...	...	18· 9 knots.
" 2nd	"	"	"	"	18· 1 "
" 3rd	"	"	"	"	18·85 "
" 4th	"	"	"	"	18·18 "
Or a mean speed of	...	...	...	...	18· 5 "

The steam was evenly maintained at a pressure of 250 lbs. in the boilers. The engines worked with satisfactory smoothness, without particular heating of the bearings. Seven series of diagrams were taken to determine the number of L.H.P. for all three. The consumption of coal for all the 30 Belleville boilers proved to be 18·3 tons an hour, which with the 14,500-H.P. contracted for gives an expenditure of about 3 lbs. per H.P. per hour. Four of the 30 boilers are placed 6 feet higher than the rest so as to keep steam even when the furnaces of the remainder are flooded ; also the feeding pipes are placed transversely, and not along the sides as hitherto, which gives more space in the stokeholds. Owing to the lateness of the season the full-speed trials of the vessel have had to be postponed, at the number of revolutions of all three allowed by the specification, viz., 115, but it is hoped to make them this year, if the completion of the vessel, which has not yet received the bulk of her armour, will permit it. When the ship was at full speed, a heavy swell was observed under the bows, covering two-thirds of the height of the forward part, which must be ascribed to its peculiar construction and the vessel not having received her armour.

The battle-ship "Retvizan," on trial at Delaware Cape, developed a speed of 17·75 knots at 122 revolutions of the engines. It must be remembered that the ship's bottom was not cleaned for the trial, nor was the coal of the quality generally used on such occasions, so that at the approaching official trial it is hoped she may reach a speed of 18 knots, or 1 knot more than contracted for. The main engines worked well, as did the Belleville boilers. To test the armament 198 rounds were fired, including 28 from the bow 12-inch guns and 18 from the stern pair of the same calibre, and at the conclusion of the firing no disturbance of the hull* worth mentioning could be discovered.

The I.H.P. developed by the engines of the first-class cruiser "Pallada" at recent official trials, when the vessel attained a mean speed of 19·2 knots, is shown below.

Starboard engine :—4,542·8-I.H.P., with 165 lbs. pressure of steam, the engine making 135 revolutions.

Midships engine :—4,405·6-I.H.P., with 164 lbs. pressure of steam, the engine making 154 revolutions.

Port engine :—4,151·8-I.H.P., with 168 lbs. pressure of steam, the engine making 134 revolutions.

The grand total of H.P. of all three engines is thus 13,100·2, i.e., 1,490·83 more than contracted for. The figures here given are the mean from seven series of diagrams, except those for the port engine, which represent only four, as in the latter part of the trial the indicators of the highest pressure cylinder broke down. The engines are triple screw, and worked satisfactorily during 6 hours' continuous trial at full draught; they are supplied by 24 Belleville boilers. The total area of heating surface is 36,114 square feet, or more than 3 square feet to each H.P. as designed, hence the steam was abundant and evenly sustained. The two trips made on the measured mile, gave as regards speed :—

1st, with the wind	...	...	...	..	19·5 knots.
2nd, against it	...	...	...	..	18·9 "

Mean 19·4 "

A trial of the engines of the first-class cruiser "Diana" at full power has been made, lasting six hours without a break, with a view to her official taking over. Her draught proved to be 20 feet 10 inches, on an even keel, which corresponds to a displacement of 6,660 tons, or 70 more than the estimate. The engines worked on the whole satisfactorily and without heating of the bearings, but during the second hour the port engine came to grief slightly, so that the trial was stopped, but the damage was repaired by the firm in 2½ hours.

A second six hours' trial was completely satisfactory, and seven series of diagrams were taken, which showed the engines had together developed 519 more H.P. than contracted for. The following is the analysis :—

Port engine, with 170·8 lbs. pressure and 103·3 revolutions :—I.H.P., 3,972.

Starboard engine, with 159 lbs. pressure and 130·8 revolutions :—I.H.P., 3,948.

Midships engine, with 131·9 revolutions and 172 lbs. pressure :—I.H.P., 4,209.

Total for all three engines 12,129-H.P.

The torpedo-boat destroyer "Gagara," built on the lines of the "Sokol," at the Neva Works, has had an official trial of her engines on the measured mile, under the supervision of Rear-Admiral Kasherinikov. In accordance with the regulations, the vessel first made two trips at forced draught, after which the working of the engines was tested in a four hours' trial at nine-tenths of full speed, and the trial was concluded by two more forced runs. The mean speed of all four runs worked out at 26·54 knots, with a displacement of about 203 tons, a mean draught of 4 feet 7½ inches, and a difference of 5 inches. The average revolutions were 401, with a pressure of steam in all the boilers of from 290 to 250 lbs. At the diminished speed of nine-tenths, with the same pressure, the average of revolutions was about 360. The steam was very evenly maintained under the supervision of a French engineer, who is at the works for this purpose. The machinery worked very satisfactorily in spite of the severe test to which they were put, with such a high number of revolutions.

The torpedo-boat "Voron," built by the Neva Works, has undergone her taking-over trial on the mile. The highest speed attained was 28·1 knots at 432 revolutions per minute, and the mean speed worked out at 27·5 knots. Although

towards the end of the test two of the funnels were found to be leaking, and there was a considerable escape of steam from the waste pipe, the vessel was accepted.

The torpedo-boat destroyer "Nyrok," built by the Government Ijora Yard, on the lines of the "Sokol," has also completed her trials. Her first two runs on the measured mile were made at a speed of 26·18 knots, *i.e.* :—

1st run, speed attained ..	..	..	..	..	26·47 knots.
2nd ..	..	..	..	..	25·89 ..

The speed contracted for was 26·5 knots. During her trial at nine-tenths of the possible revolutions of the engines (*i.e.*, some 360—362), the low-pressure cylinder of the starboard engine partially broke down, and the trial had to be stopped.

From the Neva Works another torpedo-boat destroyer, the "Filime," has also undergone her trial at forced draught. She is the third vessel built by them on the lines of the "Sokol." A commission was on board her to decide whether she should be taken over. The result of four runs at forced draught was to show a mean speed of 26·94 knots. The engines, fed with steam at a pressure of 190 lbs., gave an average of 397 revolutions.

The vessel was tried for four hours uninterruptedly at nine-tenths of the maximum draught, or 262 revolutions, and the engines were worked quite regularly without heating of the bearing parts. Three trips on the mile at this draught gave an average speed of 24·57 knots. Further trials will have to be put off till next year, owing to the lateness of the season.

Dockyard Notes.—The battle-ship "Oslabia" has made a trial of her engines alongside the yard, at which everything went satisfactorily. She will be kept in harbour at Kronstadt for the winter, as (though the principal work on her is completed) there are a great many small jobs to be done, while the water-tight doors, ports, and hatches are not yet fitted.

With regard to the proposed remodelling of the battle-ship "Piotr Velikie," it has been decided that the engines shall not be changed, but the magazines are to be entirely modernised, as also the armaments. This will be done as soon as the necessary credit has been assigned for the purpose.

The first-class torpedo-vessels "Ford," "Sterliad," and "Osetr" are, after some considerable delay, to be taken over from the French Yard, where they were built. Every effort is to be made to get them ready to join the Pacific Squadron before winter sets in; a large portion of the equipment was, of course, not included in the contract signed with the builders, the Granville Yard and the Forges et Chantiers de la Méditerranée, at Havre.

The town of Nicolaiev has recently been visited by M. Khilkov, Minister of Roads, who minutely inspected the excavations for deepening the ship canal between that place and Ochakov, the depth of which is now being increased to 25 feet. A new dredger, the "Michael Lessovski," has lately been brought from England for the purpose, and part of the work is being carried on at the mouth of the River Bug, and has yet to be taken a distance of 14 miles, while it is expected that it will be completed by next spring. It was suggested to him that the depth should be still further increased to 30 feet, and he promised to lay the matter before the Council of State and endeavour to procure the sum necessary for the purpose. Similar works are in progress at the Kronstadt Mercantile Harbour, workmen and machines having been brought from Libau with that object. The space it is proposed to deepen is some 40,000 toises, or 93,000 square yards, beginning near Fort Menschikov, and the depth obtained will be at least 24 feet. The work will only take 86 days. The part of the harbour adjoining the Rybrug Road should have also been deepened to at least 15 feet. When the work is done the middle roadstead will be kept exclusively for ships of war.

Nine torpedo-boats of the "Sokol" type have been sent to Port Arthur during the few months. They are of course to join the Pacific Squadron, and are christened as follows :—

From the Neva Yard—"Baklan," "Bekas," "Gortetsa," "Grach," "Kulik," "Revepel," "Skvorets," "Spriji," and "Shegol."

From the Ijora Yard—the "Kondor," "Diatel," and "Drozd."

These latter are exclusive of those first mentioned.

During this year's commission new boilers will be fitted on the "Djigit" and torpedo-boats Nos. 103 ("Pernov"), 112, 115, 116, 125, and 126.

On the close of the commission the boilers will be removed from the battle-ship "Kreml," the cruisers "Asia" and "Lt. Hyin" (four in each case) and replaced, the engines in the latter case also being subjected to complete repair. Next year the cruiser "Rynda" and torpedo-boats Nos. 101, 102, 106, and 107 will also receive new boilers. The battle-ship "Imperator Alexander II." will also have new boilers this year while her engines will be repaired and the turbines altered.

General.—Simultaneously with the expedition to the Northern Frozen Ocean, the hydrographic expedition to the White Sea has finished its survey. Its operations have been in progress some 15 years. The work of the present year has been the continuation of the survey of the shore of the Gulf of Onega, a distance of 280 miles, and the gorge of the White Sea at the three islands where all ships pass from the Frozen Ocean. In addition meteorological observations have been carried out and soundings taken. The two steamers employed were the "Lieutenant Ovtsyn" and the "Lieutenant Skuratof," under the orders of Fleet Navigator Maltsov, with a staff of nine experts, the work lasting five months. Next year the shores of the Kandalak Gulf will be surveyed.

The use of foreign coal is, of course, a serious cause of loss to the Russian Navy in the matter of expenditure. The Minister of Agriculture and Crown Estates has accordingly, after careful consultation with the Departments concerned, given orders that every means shall be taken to improve the working and organisation of the Suchan Coal Mines in the South Ussuri district at the Government expense. An estimate is being prepared for this expenditure, as also for the running of a line from them to the Bay of Discovery, the deepening of that gulf and the future management of the whole business. The total sum to be expended, spread over a period of two years, is estimated at 2,400,000 roubles. The amount of coal in these mines is calculated approximately at 1,660,000 tons, and the yearly output at 100,000 tons. The cost in the Bay, allowing for the covering of the initial expenses within 16 years, the time required for working is 10 kopecks (2½d.) a pood (36 lbs.).

The *Engineer Journal* has an article dealing with the bearing of submarine boats on the defence of fortified ports. These will, the author thinks, be largely useful to the assailants in destroying mine-fields and fixed torpedoes. This will prevent the fort artillery from protecting them, a duty which will pass entirely into the hands of the sailors, who will employ submarines for the defence in their turn. He thinks that the invention, when perfected, will be wholly to the advantage of the assailants, whose boats, at 8 to 10 knots, can rapidly cover the distance to the mine defences, and therefore need not stay very long under water.—*Kronstädtski Viestnik*.

UNITED STATES.—*Report of Secretary of the Navy, Navy Department, Washington, D. C., 4th November, 1901.*—The President: Sir, I have the honour to make the following report of the Navy Department for the past year:—

It is accompanied by the reports of the Assistant Secretary and of the various Bureaus. These have all been prepared with painstaking regard to the needs of the Service, and I particularly commend them to your consideration and that of Congress. Such of their various suggestions as in the interest of brevity I have not referred to should not be regarded as less entitled to careful attention. Where desirable legislation is recommended by them, Bills will be prepared embodying it and sent to Congress for its consideration.

Operations of the Asiatic Squadron.—The vessels of this squadron, detailed for service in Philippine waters, have been employed in co-operating with our military forces in maintaining an effective patrol of the various islands, and in preventing the insurgents from receiving supplies of arms. Since the capture of Aguinaldo, in which operation the U.S. "Vicksburg" took a conspicuous part, the Department has reduced its force on this station.

The vessels in Chinese waters have kept in touch with the important ports on the China coast and with our forces operating on shore, until the evacuation of the Chinese capital by all but a legation guard, since which time they have been so distributed as to readily co-operate in case of an emergency.

The efficiency of the squadron in Asiatic waters reflects credit upon the Commander-in-Chief and the squadron commanders.

On 15th July, 1901, in the presence of Rear-Admiral Rodgers, U.S.N., second-in-command of the Asiatic station : of Rear-Admiral Beardslee, U.S.N. (retired), and other naval officers, and of a large number of distinguished Japanese officials, a monument was unveiled and dedicated at Kurihama, Uraga, Japan, marking the landing-place of Commodore Perry on his historic visit to that country in July, 1853.

In the operations of this squadron the instruction of officers and men has received more attention during the last year than ever before. In addition to the usual evolutionary cruises along the Atlantic coast and in West Indian waters several of the smaller vessels have done important surveying work, and also been on hand to protect American interests along the South and Central American coasts. During the summer, fleet evolutions were had in Nantucket and Vineyard Sounds, and practical experiments carried on to determine the facility with which naval guns up to 5-inch calibre can be landed. Shore fortifications for both gun and torpedo work were erected with the resources of the squadron, and practical experiments in the matter of attack and defence conducted on sea and on shore.

South Atlantic Squadron.—The vessels of this squadron have cruised along the entire South Atlantic seaboard, in harmony with our commercial interests there.

European Squadron.—In order to re-establish this station, one vessel was withdrawn from the South Atlantic Squadron, and two vessels were withdrawn from the Asiatic Squadron. They are now cruising in the Mediterranean.

The vessels on this station have been in active service, and have visited the important points on the Pacific coast. On account of the great length of coast line, the necessity for protecting our interests in sections where conditions are frequently unsettled, and the few vessels available for this station, they have been compelled to drill singly instead of in squadron.

The vessels of the Apprentice Squadron have made the usual cruises to Europe and the West Indies, with beneficial results. The method referred to in my last report of training landsmen who come from various parts of the United States has proved so far successful that the Department has increased the facilities for this work. The training-vessels are kept cruising continuously, except for the short periods necessary for repairs and for supplies.

Naval Personnel.—The need of Line officers for sea duty becomes steadily more pressing, and in case it should become necessary to man all the vessels of our present fleet, the required number is not available, and I recommend that the number of lieutenants be increased from 300 to 350, and that the limit of the number of junior lieutenants and ensigns be made 600.

I concur with the Chief Naval Constructor that there should be an increase in his corps. With more ships to build, there must be more constructors. Some increase in the Corps of Civil Engineers is necessary in view of the great increase in yard and dock construction.

As the original reason for the creation of this office has ceased to exist, I renew my recommendation that the statute authorising appointment of professors of mathematics be so amended that, without disturbing those who now hold office, no further appointments shall be made.

I cannot too earnestly call attention to the necessity for an increase of this most important branch of the Navy. As with the officers so with the enlisted men. The ships of the Navy have been greatly increased in number, but commensurate steps have not been taken to provide the necessary crews for them. I recommend that the present enlisted force be increased by 3,000 men.

I recommend that the Marine Corps be increased by 750 men, as recommended by the General Board.

I renew my recommendation that the office of Vice-Admiral be revived.

The following tables are presented, showing in a concise form a comparison of our own personnel with that of the other principal naval Powers:—

Table I.—Number of commissioned officers of the executive branch:—

Nation.	1896.	1897.	1898.	1899.	1900.	1901.
England	1,728	1,768	1,804	1,897	1,970	2,085
France	1,612	1,707	1,695	1,662	1,663	1,663
Germany	723	749	785	826	905	974
Russia	859	1,089	1,002	1,023	1,096	1,096
Japan	—	—	619	700	724	—
Italy	586	586	720	748	768	—

The numbers on the United States Navy Lists, including the former engineer officers (165 in 1900, and 155 in 1901) are:—1896, 715; 1897, 712; 1898, 712; 1899, 704; 1900, 717; 1901, 728.

Table II.—Total strength of all ranks and ratings:—

Nation.	1895.	1896.	1897.	1898.	1899.	1900.
England	88,500	93,750	100,050	106,390	110,640	114,880
France	—	45,113	45,461	48,783	44,620	49,775
Germany	21,487	21,485	23,302	24,906	26,651	30,386
Russia	40,372	40,500	40,184	42,500	39,546	39,546
Japan	13,839	23,000	23,000	23,000	23,000	26,108
Italy	24,203	24,200	24,200	25,669	24,560	25,804
United States	13,460	13,460	13,218	12,218	20,275	23,453

In the foregoing table the English figures include the Royal Marines. The French Marine Infantry is not included. The United States figures do not include Marines. The Russian Naval Estimates for 1899 proposed increasing the total force to 52,250 in 1900, and to 57,500 in 1901. England increases her naval *personnel* by making provision in the Estimates of each year for a sufficient future increase in officers and men to man the new ships. France has proposed this year to add to her *personnel*: 150 lieut.-commanders, 116 lieutenants, 101 ensigns and cadets, and 170 engineers. This increase is to be made at the rate of 63 Line officers and 28 engineers per year. France also proposes to increase her enlisted force at the rate of 2,320 men yearly.

Germany provides for the future increase of the naval *personnel* in a systematic manner under the law governing her shipbuilding policy. This increase is fixed by law, as follows :—

	Year.	Line Officers.	Other personnel.	Total.
1900	876	22,476	23,352
1905	1,179	31,187	32,366
1910	1,482	39,898	41,380
1915	1,785	48,609	50,394
1920	2,088	57,320	50,408
Total increase, 1900 to 1920...		1,212	34,844	36,056
Average increase in five years...		303	8,742·2	9,014
Average annual increase		60·6	1,742·2	1,802·8

Favourable consideration is invited to the report of the Board of Visitors to the Naval Academy, and to its recommendations :—

1. That the title of "midshipman," which is full of historic association, be restored and substituted for "naval cadet."

2. That the probationary course for naval cadets be reduced.

Also to the report of the Chief of the Bureau of Steam Engineering, and to its recommendations :—

1. That an engineering experimental laboratory be established at the Naval Academy for the use of the cadets in their studies.

2. That a post-graduate course of instruction in engineering be authorised.

Also to the reports of the Chief of the Bureau of Navigation and the Superintendent of the Naval Academy, and to their recommendations :—

1. That no cadet shall hereafter be appointed whose age is under fifteen or over eighteen on 1st October of the year of entrance to the Naval Academy.

2. That the salaries of the civilian professors at the Naval Academy be revised.

3. That a training-vessel be built for the Naval Academy sufficiently large to accommodate the entire corps of cadets.

I recommend that the number of cadets at the Naval Academy be increased 50 per cent., as recommended by the General Board, and that there be appointed annually by the President ten at large.

Upon recommendation of the Superintendent of the Naval Academy the Department decided, in the interest of the convenience of candidates for admission as well as of the Government, to have examinations for admission to this institution conducted by the Civil Service Commission at or near the homes of the candidates instead of at the Naval Academy as heretofore. The wishes of the Department were cordially

acquiesced in by the Civil Service Commission, and this new method of examination has been put in operation with successful results.

Upon requests from the Governors of a few States, their respective State Militias, when practicable to detail vessels for the purpose, were instructed on board regular men-of-war in the duties of the Naval Service. The reports of these drills and the operations, so far as known to the Department, of the other State Militias, are set forth in the report of the officer in charge of this branch.

National Naval Reserve.—I have again to call attention to the pressing need of a national Naval Reserve force from which to draw for sea service immediately upon an outbreak of war. This subject has received attention in previous reports, and recommendations have been made for the enrolment and organisation of such a national body, to be under the general direction of the Navy Department and subject to the call of the Chief Executive in times of national emergency.

The results of the Spanish-American War were such as to assure everyone having knowledge of naval matters that steps should at once be taken to meet the one certain and positive requirement which will face the nation upon an outbreak of war—the immediate necessity of that exigent time, if it comes, of a large increase in the men of the Navy from an existing reserve—an increase which must, in the main, be made from the seafaring class, who, having acquired the habit of the sea, are, at home on the water. There is no better way of insuring such a reserve than by the measure now urged.

Our pressing need is for such a reserve—a body to go to the front on board ship at once upon the outbreak of war, or when it is imminent. Next to this will come the defence of the coast, and for such purpose the Naval Militia will be essential. I see reasons for both organisations, and have heretofore done all possible to aid the one now existing—the Naval Militia, and to convince Congress of the necessity for the authorisation of the other—the National Naval Reserve.

Referring to the Act to re-organise and increase the efficiency of the *personnel* of the Navy and Marine Corps of the United States, approved 3rd March, 1899, I call your attention to Sections 8 and 9, and recommend that the provision that officers retired under these sections shall be given the rank and three-fourths the sea pay of the next higher grade be so far modified that the retirement will be with the rank and three-fourths the sea pay of the grade held at the time of retirement. This modification is especially desirable in Section 8, where the retirement is voluntary.

Section 8 offers a valuable and much-needed officer a premium to go on the retired list at the very time when the number of officers is far short of the number required by the needs of the Service, and when Congress is called upon for more. Section 9, on the other hand, gives a premium to the same end to an officer whose services are no longer of value, and who receives this premium when other officers equally deserving are retired with no such favour. I never favoured these sections.

Paragraph 2 in the section "Pay of the Navy" of the last Naval Appropriation Bill benefits only officers who served during the late war with Spain. As the object of it is to prevent retarding the promotion of any deserving officer by the advancement at any time of others over him, it should be made to apply to all officers by an amendment striking out the words "for service rendered during the war with Spain."

Some provision should be made whereby when retired officers are ordered into active service the time of their active service thereafter shall be reckoned in their favour as to rank and pay when they are again detached from active service.

I recommend that the law authorising the retirement of petty officers and enlisted men who ~~have served~~ thirty years in the Navy be amended so as to include within said

period of service all honourable service in the United States Navy, Marine Corps, and Army.

Ordnance and Armour.—In order to gain greater energy, guns have been increased in weight and dimensions until it is believed that they have now reached a point beyond which it is inexpedient to go. Any further increase in their efficiency must be looked for in the use of heavier projectiles, and in the development of powders possessing higher ballistic properties than those now in use.

New types of 5-inch and 7-inch guns have been made and tested with excellent results.

The manufacture of smokeless powder has progressed satisfactorily, both at the Government works and at those of private manufacturers. The Department in June last ordered a board of naval officers and chemists to revise the specifications for the manufacture of smokeless powder, and to draw up rules for its test, examination, and storage both in magazines on shore and on ship board, and specific instructions on these points have been issued throughout the Service. In addition a general examination and chemical test were made of all smokeless powder in the Naval Service, and the results are satisfactory.

The capacity of the armour plants is now about 7,500 tons a year of armour of the best quality; and at the instance of the Department the manufacturers are making preparations to increase their output to 10,000 or 12,000 tons a year in order to complete deliveries in accordance with present contracts and also in order to be ready to provide armour for additional vessels should they be authorised by Congress. They have already turned out more armour than was anticipated.

Under authority vested in the Department by Congress contracts were signed on 28th November, 1900, for over 37,000 tons of armour required for vessels authorised and building. Comparing the tests made in this country with reports of those made abroad, our armour seems to be the best that can at present be produced, and the price at which it is obtained is lower than that paid abroad. Deliveries amounting to nearly 2,000 tons have already been made under these contracts.

A new naval magazine is urgently required at the port of Boston, Mass., the present site in Chelsea having become practically untenable for the storage of explosives, owing to the growth and close proximity of the population.

The storage of explosives there, except in very small quantities, has been given up.

Magazine facilities are also inadequate at Portsmouth, N.H., the present building being small and within the limits of the Navy Yard, which is inadvisable.

Progress upon vessels now under construction has been somewhat delayed by reason of strikes and the non-delivery of material on contract time.

[A table is here given showing the percentage of completion of vessels under construction, and a list of contracts for new vessels, all of which information has already been given. Following tables of foreign naval construction the Secretary says:]

It will be noticed that England and France will lay down about the same amount in the next year as in the past. Germany is following a building programme which will provide a strong Navy in 1898, and under the law authorising this programme its Government can replace a lost vessel by another of the same class, and can also replace vessels of a certain age by new ones, this age being for battle-ships 25 years, and for cruisers from 15 to 20 years. Japan has a further extension of her Navy under discussion, while Russia progresses steadily with hers.

Attention is invited to the report of the Engineer-in-Chief :—

1. To the details of the trials of the machinery of the battle-ships "Wisconsin," and "Illinois," and of the trial trips of the torpedo-boats "Stockton," "Shubrick," "Bagley," "Barney," "Biddle," and "Bailey."
2. To the reports of the inspection of *matériel* and the excellent results thereof.
3. To the recommendations in regard to an efficient engineering *personnel*, both official and enlisted.
4. To the recommendations in regard to increased rank for warrant machinists after a certain number of years' service.

The varied duties of the Bureau of Equipment are shown in the detailed report of its Chief.

Coal Depôts.—Attention is invited to that portion of the report dealing with the establishment and construction of coal depôts. This work has been pushed forward during the past year, but much yet remains to be done to thoroughly establish ourselves in this respect, and for which ample appropriation should be made.

Ocean and Lake Surveys.—I commend to favourable consideration the recommendation of the Chief of this Bureau looking to the construction of a suitable building for use as a hydrographic office. Attention is invited to that part of the report of the Chief of the Bureau of Equipment relating to electrical appliances on board ship, and to the necessity for a separate corps of warrant officers of the electrician class. The volume and scope of business transacted by this Bureau justify the authorisation of an assistant chief.

Public Works.—With the necessary enlargement of the Naval Establishment, due to the national expansion, the duties of this Bureau have been largely increased. During the past year much important work has been done in our Navy Yards, the construction of authorised dry docks has been pushed, and preliminary steps have been taken, looking to the establishment of new stations in our insular possessions. Attention is invited to the details of the annual report of the Chief of this Bureau.

In accordance with the directions contained in the last Naval Appropriation Act, the Department organised a commission of officers to select and report upon the best site for a naval station in the Philippines. It unanimously recommends Olongapo, in Subig Bay. The necessity for such a station is apparent, and an appropriation should be made for it. Our interests in that part of the world necessitate the presence of a large fleet in Asiatic waters at all times. While in time of peace these vessels can be docked and repaired in foreign dockyards or sent thousands of miles away to our own naval stations on the Pacific, it goes without saying that this would not be the case in time of war on our part, and even of a war in which we might be a neutral.

Proposed Naval Station, Porto Rico.—In accordance with the provisions of the last Naval Appropriation Act, directing an examination of the coast of Porto Rico for the selection of a site for a naval station, a board was appointed which made an examination of the coast of Porto Rico. It recommends that the naval station be located on the shores of the harbour of San Juan, and includes in its recommendations the construction of a dry dock.

Proposed Naval Station, Hawaiian Islands.—The same Act contains a provision appropriating \$150,000 for the purchase of land for a naval station, and for harbour and channel defences at Pearl Harbour, Island of Oahu. Negotiations for the purchase of land failed, the owners refusing to entertain propositions for its sale. Under these circumstances, the Department deemed it advisable to direct the commandant of the naval station at Honolulu to take steps looking to the condemnation of

a tract of land about Pearl Harbour sufficient for naval purposes. Proceedings to that end were accordingly commenced in the proper courts in July of this year.

Estimates for the requirements of naval station, Tutuila, have been submitted.

In accordance with the Act of Congress approved 6th June, 1900, a board was appointed to make a survey, plan, and estimates for the improvement of a harbour at the Island of Guam, with particular reference to the improvement of the harbour of San Luis d'Apra, either by dredging a basin or by building a breakwater, and to the establishment of a naval base and coal dépôt.

From the report of the board it appears that a breakwater is not considered advisable, on account of its great cost and the uncertainty of its resistance against storms, and because it is not necessary for the protection of the inner harbour.

The board, however, makes recommendations looking to the improvement of the harbour of San Luis d'Apra by dredging, to the establishment of a naval base and coaling station, to necessary means of defence, and to the selection of a town site.

It was thought at that time that Blythe Island might be used for a practice ground by the Naval Training Service, but it was decided that it was not so well adapted to that purpose as other localities, and no use of it has thus far been made. The property is about 1,100 acres in extent, very much of which is marshy; but a tract of upland, well wooded, covers an extent of about 480 acres, and upon this portion the rifle range has been located. There are no improvements upon the tract, no efforts in that direction having been made since the property was acquired by purchase in 1856, when \$130,000 was paid for it, at the rate of about \$120 per acre. The title to these lands has been reported good by the Attorney-General of the United States. The property can be availed of as a place for rifle practice and for drill by the Training Squadron when it is considered desirable to send it to those waters; but there is not thought to be any present necessity for its use.

Attention is again invited to the recommendations of the Chiefs of the Bureaus of Navigation and Yards and Docks that barracks be substituted for receiving-ships for the purpose of housing the enlisted force when waiting for transfer to sea-going vessels. The old wooden receiving-ships are rapidly wearing out. The necessary repairs to put them in good condition—often beyond the limit allowed by law—will involve a large expenditure of money, and does not commend itself as a measure of economy. It, of course, will be many years before any vessels of the modern Navy will become sufficiently obsolete to be utilised for this purpose.

In this connection the Department recommends the consideration of a plan for a general naval rendezvous at some suitable place, to be independent of the Navy Yard, and, while including commodious barracks for the whole enlisted force, devoted also to the training of enlisted men of the artificer branch of the Service. The mechanical element is now one of the most important in the management of our ships; the machinery on ship board is complicated and sometimes delicate, and the men who run it should not be green hands, but trained in that service. This would make for both economy and efficiency.

In such a rendezvous the enlisted men should be made familiar with all the mechanical appliances with which they would have to do on ship board. There is no reason why boilers should not be set up on shore at such a rendezvous, engines run, and all the other appliances of naval machinery typically represented. Such a station would serve for the assembling, recruiting, and drilling of the enlisted force from which the crews for vessels would be drafted as required. When supplemented with the necessary drill-ships assigned from the Regular Service, it would form for the artificer branch a training station corresponding to those already existing at Newport and San

Francisco for the seamen branch, and to that existing at Newport and Washington for the gunnery branch.

I recommend that the name of League Island Navy Yard be changed to "Philadelphia Navy Yard."

Supplies and Accounts.—The Department in July last ordered a board to report upon an improved ration and messing system for the Navy. The conditions showing the need of this action are described in the annual reports of the Paymaster-General and Chief to the Bureau of Navigation.

The present ration has been substantially without change since it was established in 1861 (Section 1,580, R. S.). The board recommends legislation that will give to the crews of our ships a liberal and proper diet under all conditions of service, without compelling them to contribute to their own subsistence, as at present. The changes recommended are approved, and would make the cost of the ration about 30 cents per man per diem, which is now its nominal and commutation value. At present the actual cost of the ration is from 21 to 22 cents.

Under the provisions of the *Personnel* Act, approved 3rd March, 1899, officers of the Line and Medical and Pay Corps of the Navy receive the same pay and allowances, except forage, as officers of corresponding rank in the Army, excepting that officers of the Navy when on shore duty other than beyond seas receive 15 per cent. less than when at sea. I recommend that a change be made in the existing law in the direction of making the pay of officers of the Army and the Marine Corps on the one hand, and officers of the Navy on the other, the same.

Owing to an insufficient *personnel* the Department is unable to man its colliers with officers and men of the Navy, and has therefore authorised the Bureau of Navigation to contract with merchant captains to supply and subsist the proper complement of officers and men, the Government paying wages of crew and all proper charges and dues incident to their navigation and the loading and discharge of cargo, and furnishing the stores necessary for the running of the ships. To provide for the preliminary outlay for mess stores, shipping crew, etc., and to meet the usual charges for harbour and port dues, pilotage, canal tolls, etc., it became necessary to place certain limited sums of money in the hands of these captains, who gave bonds to the Government for its protection. Next to having a commissioned disbursing officer on board, this plan is the most satisfactory that could be devised. In order, however, to meet the requirements of the Treasury officials, it is recommended that the legislation recommended by the Paymaster-General be adopted.

With the enlarged scale and greatly increased volume of work at the shore stations of the Naval Establishment, it is desirable in the interest of good administration to have a permanent inspector of accounts attached to the Secretary's office. My former recommendations on this subject are renewed.

The appropriations for the fiscal year ending 30th June, 1901, amounted to \$37,913,406·67; the amounts drawn to \$29,770,255·61, and the balances, 30th June, 1901, to \$8,143,151·06.

The total amount deposited in the Treasury from 1st November, 1900, to 1st November, 1901, arising from the sale of condemned naval vessels, condemned war prizes and their cargoes, stores, materials, nautical books and charts, fuel, clothing, rents of Government property, supplies furnished to other branches of the Government and from other lawful disposition of public property under the cognisance of the Navy Department, was \$360,490·20.

The U.S. "Minnesota," lying at the Navy Yard, Boston, Mass., used for many years as a receiving-ship for apprentices and as an armoury for the Massachusetts

Naval Militia, was the only vessel sold since the last annual report of this Department. The "Yosemite," founded off Guam, and the "Balusan," sold to the War Department, have been struck off the Navy Register.

Medicine and Surgery.—A large proportion of the naval force has for the past year been employed in and about the Philippines. This force has been notably free from epidemic diseases, and, with the exception of Cavite fever, the cases admitted to the Cavite Hospital have been those that would have occurred in any Southern climate. In the force afloat and ashore the death rate from disease has been less than that for the previous year.

The reports from Guam indicate that the inhabitants are proceeding with the establishment of a civil hospital, showing a desire to conform to the customs of other communities. Typhoid fever on the island, common during the first part of the year 1900, has now almost disappeared. The natives continue to be taught by the medical officers of the station to properly care for themselves, and the death rate has been considerably reduced, especially among women and children.

A dispensary has been opened at Pago Pago, Island of Tutuila, where the natives obtain such medicines and treatment as they require.

The sick quarters at San Juan, Porto Rico, have had relatively few occupants during the past year, and few cases of disease have occurred among the naval force remaining in Havana.

The passage by the last Congress of the Act giving assistant surgeons in the Navy the same rank as assistant surgeons in the Army has proved of great benefit to the corps. A very desirable class of young medical men is now seeking admission, and the number of vacancies has been reduced from 17 at last report to 4, and it is probable that these will soon be filled.

The Civil Service of the Department.—The Navy Department bears witness to the utility of the present system of the Civil Service. It prevents favouritism and makes merit the test of entrance into place and of standing and advance in it, and the result has been a decided increase in efficiency. In some cases where the examinations of the Civil Service Commission, which commission this Department has always found most helpful, have not been able to supply the needs of the Department, it has been permitted to adopt within itself the methods of that commission, thus recognising in local application the general principle of what is now an approved reform. For instance, the regulations governing the employment of labour at Navy Yards, promulgated in September, 1901, provided that foremen, master mechanics, quartermen in charge, and other men in charge at Navy Yards, should be appointed after competitive examination before a board of naval officers. The rules of the United States Civil Service Commission, as amended by the President on 29th May, 1899, provided that all special mechanics and civilian assistant inspectors of work and *materiel* (including armour, armour-plate, ordnance, marine engines, hulls, buildings, dredging, etc.), employed at Navy Yards, naval stations, and at private shipbuilding and manufacturing establishments where work is done by contract for the Navy Department, should be appointed after competitive examination before a board of naval officers, in the same manner as foremen, master mechanics, etc. In pursuance of the same policy the Department addressed a letter to the President on 16th November, 1900, who approved its recommendations on 20th November, 1900, as follows:—

That Rule III, Section 8, Clause (m), of the Civil Service Rules be amended to include ship draughtsmen, marine engine and boiler draughtsmen, architectural draughtsmen, structural steel work draughtsmen, electrical draughtsmen, cartographic

draughtsmen, and ordnance draughtsmen, including assistant or lower-class draughtsmen of the various grades.

The recommendation of the Secretary of the Navy was approved by the President, to take effect 20th November, 1900.

The results of the amendment of 29th November, 1900, are shown by the following statements and by the tables printed in the Appendix.

Between November, 1899, and November, 1900, in response to requests from the Navy Department for draughtsmen, the Civil Service Commission made 64 certifications, containing the names of 133 persons. Of the 64 certifications but 25 contained the full quota of three eligibles for each place. Of the 133 persons certified, 53 were appointed, 16 declined appointment, 26 were not qualified, and 2 were already in the Service. The number of persons certified, 133, includes persons who were certified for two or more places.

The Department, owing to the inability of the Civil Service Commission to certify a sufficient number of eligibles during this period, was compelled to appoint 41 draughtsmen temporarily without formal examination. Such temporary appointments were made with the approval of the United States Civil Service Commission, but the delay in getting competent persons by this method was unsatisfactory.

As will be seen by the tables in the Appendix, the Navy Department held 74 examinations from 20th November, 1900, to 1st November, 1901. 644 applicants were examined, 374 failed, 270 passed, 123 were appointed to existing vacancies, and 32 were appointed to subsequent vacancies. A comparison of the tables in the Appendix will show that the amendment of 20th November, 1900, has been of decided advantage to the Department in the matter of securing draughtsmen and that the examination of applicants in the vicinity of places for which they are examined is a great improvement in the way of obtaining the required technical and professional employees, who, if the Government offer only a distant opening, are attracted from it by the nearer opportunities of civil life.

Naval Observatory.—Attention is called to the first and very important report of the Board of Visitors to the Naval Observatory. I earnestly commend its recommendations to careful consideration. This board was created by Act of Congress in March last. I believe its visitations will be found valuable in making the Observatory efficient and in rank with the best institutions of the land. It appears that no other observatory in the world has the expenditure of so much money, but also that its results are not commensurate with those of some other observatories, the expenditure of which is less. Its head should, of course, be the best astronomer, who has proper administrative qualifications, that can be found in the country. It is especially desirable that he should have continuity of tenure, and the Observatory has undoubtedly suffered from frequent changes in its superintendents.

While the average term of superintendents at Greenwich has been twenty-eight years, and at Harvard fifteen, at the Naval Observatory it has been only a little over three. I urgently recommend that the legislation of the last Congress to the effect that "the Superintendent of the Naval Observatory shall be, until further legislation by Congress, a Line officer of the Navy of a rank not below that of captain," be repealed, and that on the contrary it be enacted that there shall be no limitation upon the field from which the Superintendent is to be selected. As well might the above-quoted statute have provided that the Commissioner of Fish and Fisheries should be selected from the Line of the Marine Corps, or the Director of the Geological Survey from the Line of the Army.

There is no vital relation between the Navy and the Observatory. It may happen that some naval officer is pre-eminently qualified for such a place, in which case he would be appointed to it, but the country is entitled to have unlimited range of selection. The present limitation, which shuts out the whole body of civilian astronomers, and even any astronomer in the Navy who does not happen to be in the Line, or, if in the Line, below the rank of captain, is peculiar. Only a very small proportion of naval officers are not below the rank of captain, and as most of them are required for naval services—a requirement which is now increasing—the list from which selection can be made is a noticeably small one. It is evident, too, from the wording of the above quotation from the statute, that Congress in passing it had in mind further legislation in this respect.

Increase of the Navy.—The Navy to-day is a far greater factor in our relations with the world than it was before the recent national expansion which now includes Porto Rico, the Hawaiian Islands, the vast area of land and sea in the Philippines, and our obligations to Cuba. If we are to have a Navy at all it must be commensurate with these great extensions—greater in international even than in territorial importance. This necessarily involves the construction of more naval vessels, their manning, exercise, and maintenance.

The General Board, of which the Admiral is President, recommended the following increase of the Navy :—

Four first-class battle-ships.

Two first-class armoured cruisers.

Four picket vessels of about 650 tons trial displacement, with a sea speed of 15 knots, with twin screws, carrying a battery of four 6-pounder and two Colt guns, and a complement of 60 officers and men.

Six sheathed and coppered sea-going gun-boats of about 1,000 tons trial displacement, with moderate sail power, similar to the "Annapolis" class.

Six light-draught, steel gun-boats of about 200 tons trial displacement, for insular service in the Philippines.

Six light-draught, steel gun-boats of about 200 tons trial displacement, not to exceed 6 feet draught, for insular service in the Philippines.

Six steel sailing training-ships of about 2,000 tons trial displacement.

One collier of 10,000 tons cargo capacity and a sea speed of 12 knots.

Three thousand enlisted men, in order that they may be enlisted and drilled in preparation for the completion of the ships.

Seven hundred and fifty marines. (This number needed for duty on board ship, and does not include the necessary garrison for posts at home and in our insular possessions.)

An increase of 50 per cent. in the number of naval cadets now allowed by law, in order to provide for the increase of officers needed for the ships recommended above.

The Board of Construction recommend :—

Three sea-going battle-ships of about 16,000 tons trial displacement.

Two armoured cruisers of about 14,500 tons trial displacement.

Six gun-boats of about 1,200 tons trial displacement.

Six gun-boats of about 600 tons trial displacement.

Six gun-boats of about 200 tons trial displacement.

Two colliers of about 15,000 tons trial displacement.

One repair-ship of about 7,500 tons trial displacement.

Six training-ships of about 2,000 tons trial displacement.

Four picket-boats of about 650 tons trial displacement.

Four tug-boats.

All the vessels thus recommended are desirable in the prospective and harmonious development of our naval force. A larger increase than usual is also desirable in view of the fact that none was made last year. Some of the vessels above recommended, however, can better than others be omitted for the present from the list and await appropriation hereafter. Among these are the gun-boats of 600 tons displacement, in case the picket-boats of similar dimensions are authorised ; also the repair-ship and a portion of each of the other classes of smaller war-vessels. The Department therefore recommends :—

- Three first-class battle-ships.
- Two first-class armoured cruisers.
- Three gun-boats, each of about 1,000 tons trial displacement.
- Three gun-boats, each of about 200 tons trial displacement, for insular service.
- Three picket-boats, each of about 650 tons trial displacement.
- Three steel sailing training-ships, each of about 2,000 tons trial displacement.
- One collier of about 15,000 tons trial displacement.
- Four tug-boats.

The Department will submit to Congress in December next, as directed by the Naval Appropriation Bill, a general description of two sea-going battle-ships and two armoured cruisers, according to which the battle-ships and cruisers above recommended should be built if appropriation is made therefor.

In making this report I take pleasure in acknowledging the efficient and zealous service of the Assistant Secretary, of the Chiefs of the Bureaus and officers of the Department, and of the officers and men generally of the Navy and the Marine Corps on shore and afloat, as well as of the civilian force.—JOHN D. LONG, Secretary of the Navy.—*Army and Navy Journal*.

MILITARY NOTES.

PRINCIPAL APPOINTMENTS AND PROMOTIONS FOR FEBRUARY, 1902.

Lieut.-Colonel and Brevet Colonel C. A. Mercer, I.S.C., to be a Colonel on the Staff in India, and to have the substantive rank of Colonel in the Army. Colonel H. R., Viscount Dwyne, C.B., C.I.E., from Brigadier-General commanding the Cavalry Brigade, Curragh District, to be graded as a Major-General on the Staff with the local rank of Major-General whilst employed on duty in connection with Remounts in South Africa. Lieut.-Colonel and Brevet Colonel J. Hotham from R.A. to be graded as an A.A.G. for Remounts in South Africa. Colonel Sir C. S. B. Parsons, K.C.M.G., from h.p. to be an A.A.G. Lieut.-Colonel M. Quayle Jones, C.B., from the Royal Warwickshire Regiment, to be Colonel to command the 6th Regimental District (the Royal Warwickshire Regiment). Colonel F. W. Benson, C.B., from h.p. to be an A.A.G. at Head-Quarters. Major-General Sir J. C. Ardagh, K.C.I.E., C.B., R.E., is granted the local rank of Lieutenant-General, whilst employed in South Africa. Colonel Sir E. T. H. Hutton, K.C.M.G., C.B., A.D.C., from h.p. to be Major-General on appointment to command the Military Forces of the Australian Commonwealth. Lieut.-Colonel H. Finn is granted the local rank of Brigadier-General whilst employed as Commandant of the Military Forces in New South Wales. Brevet Colonel R. H. W. H. Harris, C.B., from Lieut.-Colonel h.p. to be Colonel to command the 33rd Regimental District (the Duke of Wellington's West Riding Regiment). Major-General Sir G. de C. Morton, K.C.I.E., C.B., to be a Major-General on the Staff to command the troops in the Dublin District. Major-General H. L. Smith-Dorrien, D.S.O., to be Adjutant-General in India. Lieut.-General the Hon. Sir Andrew Clarke, G.C.M.G., C.B., C.I.E., to be Colonel Commandant Royal Engineers. Lieut.-General C. Strahan, R.E., to be Colonel Commandant Royal Engineers. Brevet Colonel A. G. Watson, from Lieut.-Colonel h.p. to be Colonel to command the 28th Regimental District (the Gloucestershire Regiment). Colonel H. C. B. Farrant from h.p. to be a D.A.G. Lieut.-Colonel A. L. Bayley, the West India Regiment, to be Colonel. Lieut.-General Sir H. Le G. Geary K.C.B., R.A., to be a Lieut.-General on the Staff to command the troops in Bermuda. Lieut.-General R. B. Lane, C.B., from Brigadier-General on the Staff commanding the troops at Alexandria, to be a Major-General on the Staff to command the troops at Malta. Major-General E. S. Brook, C.B., to be a Major-General on the Staff, Field Force, South Africa. Lieut.-Colonel J. Temple, R.F.A., to be Colonel. Lieut.-Colonel J. A. Coxhead, C.B., R.F.A., to be Colonel. Lieut.-Colonel E. E. M. Lawford, I.S.C., is granted the local rank of Colonel whilst officiating as Colonel on the Staff, Rangoon.

HOME.—With reference to Army Order of 1st February, 1902, patterns of the universal service dress for home and abroad can be seen in the museum of the Royal United Service Institution.

The following return of troops and horses sent out to South Africa between 1st January, 1900, and 31st December, 1901, has been issued as a Parliamentary paper:—

During	From Home and India.			
	Officers.	Warrant Officers.	N.C.O.'s and Men.	Horses.
1900.				
January	1,099	45	28,072	10,229
February	1,362	47	32,356	5,701
March	1,130	63	26,539	5,501
April	480	18	11,682	4,522
May	321	4	7,020	2,481
June	271	7	10,092	2,649
July	120	6	2,107	1,277
August	93	7	3,137	832
September	128	3	4,644	1,187
October	113	4	2,337	2
November	125	18	2,331	895
December	106	9	1,080	591
Total for 1900 ..	5,348	231	131,407	35,867
1901.				
January	288	12	3,333	2,471
February	275	3	5,225	1,495
March	782	9	21,591	2,328
April	366	12	4,498	2,724
May	304	15	3,509	2,801
June	287	11	5,532	2,481
July	99	3	2,055	2,314
August	179	13	3,546	1,672
September	197	4	1,958	2,128
October	191	13	1,466	2,401
November	270	7	5,350	2,856
December	619	16	11,686	5,024
Total for 1901 ..	3,857	118	69,749	30,695
Grand Total ..	9,205	349	201,156	66,562

During	Colonial Contingents.				Remounts from Abroad.
	Officers.	Warrant Officers.	N.C.O.'s and Men.	Horses.	
1900.					
January	134	2	2,080	2,145	840
February	69	3	1,313	1,384	2,703
March	149	1	2,739	3,065	10,341
April	45	...	834	880	7,879
May	81	1	1,349	1,690	7,761
June ... ...	..	...	...	...	12,551
July ... ...	..	...	...	...	3,305
August ... ...	..	...	...	...	5,293
September ... ...	..	...	...	...	8,680
October ... ...	..	...	...	...	2,213
November ... ...	..	...	...	...	1,120
December ... ...	..	...	...	...	5,272
Total for 1900 ..	478	7	8,315	9,164	67,958

During	Colonial Contingents.				Remounts from Abroad.
	Officers.	Warrant Officers.	N.C.O.'s and Men.	Horses.	
1901.					
January ...	17	...	567	580	4,224
February ...	75	1	1,424	1,391	5,991
March ...	162	6	3,806	2,722	9,022
April ...	86	3	1,672	1,951	4,850
May ...	3	...	2	..	4,384
June ...	...	...	...	...	4,742
July ...	9	...	7	...	9,130
August ...	21	2	324	...	7,800
September ...	...	...	...	...	7,550
October ...	...	...	...	...	10,728
November ...	...	...	...	...	8,099
December ...	...	...	...	...	15,463
Total for 1901 ...	375	12	7,802	6,644	91,983
Grand Total ...	853	19	16,117	15,808	159,941

During	Totals.			
	Officers.	Warrant Officers.	N.C.O.'s and Men.	Horses.
1900.				
January ...	1,233	47	30,152	13,214
February ...	1,431	50	33,669	9,788
March ...	1,279	64	29,278	18,907
April ...	525	18	12,526	13,281
May ...	402	5	8,369	11,932
June ...	271	7	10,092	15,200
July ...	120	6	2,107	1,582
August ...	93	7	3,137	6,125
September ...	128	3	4,644	9,867
October ...	113	4	2,337	2,215
November ...	125	18	2,331	2,015
December ...	106	9	1,080	5,863
Total for 1900 ...	5,826	238	139,722	112,989
1901.				
January ...	305	12	3,960	7,275
February ...	352	4	6,649	8,877
March ...	944	15	25,397	14,072
April ...	452	15	6,170	9,525
May ...	307	15	3,511	7,185
June ...	287	11	5,532	7,223
July ...	108	3	2,062	11,444
August ...	200	15	3,870	9,472
September ...	197	4	1,958	9,678
October ...	191	13	1,466	13,129
November ...	270	7	5,350	10,955
December ...	619	16	11,686	20,487
Total for 1901 ...	4,232	130	77,551	129,322
Grand Total ...	10,058	368	217,273	242,321

AUSTRIA-HUNGARY.—The Army Budget for 1902 amounts to 324,314,062 kronen 80 hellers, viz. :—

Ordinary Expenditure	...	...	295,474,654 kronen	65 hellers
Extraordinary Expenditure	...	...	21,020,058 "	15 "
Expenditure for Bosnia	...	...	7,819,360 "	—

showing a decrease on the 1901 credit of 2,146,442 kronen 25 hellers, viz. :—For Ordinary Expenditure an increase of 2,892,204 kronen, for Bosnian Expenditure an increase of 68,250 kronen, and for Extraordinary Expenditure a decrease of 5,406,896 kronen 25 hellers.

Ordinary Budget.—The increase is chiefly due to the following :—

Secretary-clerks at military courts have hitherto been corporals; in future one quarter of them will have the rank of sergeant-major, another quarter that of sergeant, whilst only the remaining half will be corporals.

Captains of Fortress Artillery continue to be mounted. With this object credits are demanded for 36 captains. Only 36 more will remain to be mounted during 1903.

Three new squadrons of military transport will be raised in 1902.

The number of men belonging to the Ersatz Reserve continues to increase. Permission has therefore been demanded for the instruction of 61,000 men a year instead of 55,000, the number provided for in the 1901 budget.

Repairs to barracks become more and more numerous and will necessitate, in 1902, an increase of 630,000 kronen over the expenditure for 1901. The increase in the amounts of officers' lodging allowance, decided upon in 1901, carries with it an increase of 1,260,000 kronen under this heading.

As the numbers of non-commissioned officers who re-engage increase annually, the credit allotted to re-engagement bounties has been augmented by 210,000 kronen for 1902.

The difficulty in finding draught horses strong enough for Field Artillery necessitates an increase in the average price to be paid for them, viz., 775 instead of 735 kronen.

Extraordinary Budget.—The credits asked for are principally as follows :—

					Kronen.
Small Arms and Ammunition	...	...	...	...	1,837,500
Armament of Forts	...	...	...	...	2,362,500
Smokeless Powder for Siege Guns	...	...	...	...	475,000
Experiments of new Artillery Material	...	...	...	...	1,260,000
Various Credits for Field Railways	...	...	...	...	375,900
Search-lights for Forts	...	...	...	...	210,000
Purchase of Shelter Tents	...	...	...	...	157,500
New Equipments	...	...	...	...	421,113
Camps of Instruction	...	...	...	...	1,575,000
New Fortifications	...	...	...	...	1,785,000
Field Bakeries	...	...	...	...	147,000
Various Buildings (barracks, hospitals, schools)	...	...	...	...	4,131,750

The increase in the expenditure for Bosnia provides a first credit for the formation of an artillery dépôt at Serajevo, and for the supply of drinking water for the garrison at Trebinje. —*Révue Militaire.*

The *Militär-Zeitung* of Vienna states that the new field gun built according to the instructions of the committee appointed to select a gun for the Austrian Army was tested in competition with an Ehrhardt and a Skoda gun, on September 4th, at the Austrian manoeuvres, in the presence of the Emperor. The special feature of the

gun is that when once laid it will continue to fire in the particular direction without re-adjustment, the springs which receive the force of the recoil serving perfectly to bring the gun to the same position. The gun, however, was not considered altogether satisfactory, and the decision as to the new field gun for the Austrian Army was once more postponed. The testing of the gun was included in the operations which took place from 2nd to 7th September, when a combined attack was made near Veszprin by infantry and field and siege artillery under as nearly as possible war conditions. These operations were followed by the manoeuvres of the 4th and 13th Army Corps in the angle formed by the rivers Drau and Danube, which manoeuvres were concluded by the crossing of the Danube over a pontoon bridge.

GERMANY.—The number of young men on the Revision Lists for 1900, amounted to 1,220,357, and was made up as follows:—

Young men of 20 years of age	...	...	...	515,700
" " 21 "	...	...	...	353,500
" " 22 "	...	...	...	260,602
Above these ages	...	...	...	90,555
Total	...	...	...	1,220,357

Of this number 160,084 failed to appear.

Of the 1,060,273 recruits examined, the following were—

Rejected	...	...	...	...	...	...	...	1,171
Unfit	...	...	...	...	...	...	...	39,345
Put back	...	...	...	...	...	...	...	573,799
Attached to 1st Levy of Landsturm	...	...	...	...	...	...	...	102,723
" " Territorial Ersatz Reserve	...	...	...	...	...	...	...	80,986
" " Naval	"	"	...	...	...	...	...	1,130
Total	...	...	...	...	...	...	...	799,154

233,459 were declared fit to be enrolled and were composed as follows:—

Young men of 20 years of age...	...	...	...	...	106,463
" " 21 "	...	...	...	...	56,201
" " 22 "	...	...	...	...	68,416
Above these ages	...	...	...	...	2,379
Total	...	...	...	...	233,459

In addition, 1,276 young men were classified as supernumerary in the category, that is, they are liable to be called to the colours in the event of a deficit in the effective of those fit to be enrolled. Finally, the number of those enlisting voluntarily, of 20 years and upwards, during 1900, amounted to 25,175 for the Territorial Army and 1,209 for the Navy.

All the young men mentioned above were 20 or more years old, and were consequently liable to obligatory military service, but in addition to these a certain number of youths entered the Service before the age of 20, and, including about 10,000 one-year volunteers, they amounted to 21,197 in the Territorial Army, and 1,541 in the Navy.

The composition of the enrolled contingent (233,459 men) is as follows:—

Territorial Army (combatant branch)	...	...	222,667	1	227,275
" " (non-combatant branch)	...	...	4,608	1	
Navy ...	...	...	...	...	6,184

The total number of young men, then, who entered the Army in 1900 is as follows :—

1. Men of the class enrolled ...	...	...	...	...	227,275
2. " " " enlisting before being called out	...	...	...	...	25,175
3. " " " before 20 years of age, including one-year volunteers	...	...	...	...	21,197
	Total	...	...	...	273,647

—*Revue Militaire.*

The Berlin *Tageblatt* states that by a recent regulation the engineer and pioneer corps, which up till now have been very closely connected, are in future to be quite distinct from one another. The pioneer officers will have nothing whatever to do with the service connected with the building of fortifications. Their duties will bring them in charge of the troops as such, and they will receive their special training at the Artillery and Pioneer College at Charlottenburg. Beyond this they will have the same opportunities of acquiring the higher and strictly military training as officers in other branches of the Army. They may, for instance, be ordered to attend the military academy and become officers of the general staff, or lead an army in the field. The duties of the engineer officers, on the other hand, will become more strictly technical, and they will be freed as much as possible from mere military service.

The *Ueberall* states that the reports with reference to the scarcity of non-commissioned officers are misleading. The introduction of the two years' service has no doubt created a greater demand for drill instructors, but this has been fairly well met. The peace strength of the German Army on 1st April last required 80,556 non-commissioned officers, and the number short of this was only 5,000, against the 6,000 who failed to re-engage the previous year. This deficiency is trifling compared with that which obtains in France. General André will only consent to the introduction of the two years' service in France when he can be assured that 50,000 men will re-engage as non-commissioned officers during the year, whereas up to the end of 1901 only 19,000 had so re-engaged, leaving a deficiency of 31,000 in 50,000, against the German 5,000 in 80,556.—*Times.*

ITALY.—The *Italia Militare e Marina* states that the Italian Army Budget for the year ending 30th June, 1903, amounts to £11,000,000. Of this £2,745,629 is required for the carabiniers, rifle ranges, and other purposes not directly connected with the Army proper, leaving £8,245,371, of which £7,568,131 is classed as Ordinary and £677,240 as Extraordinary expenses. The number of officers, men, and horses required to fill the cadres according to law is as follows :—Officers, 13,901 ; men, 265,384 ; non-combatants, 3,941 ; officers' horses, 9,878 ; troopers' horses, 37,912. The numbers actually provided for in the budget are :—Officers, 13,426 ; men, 213,211 ; non-combatants, 3,820 ; officers' horses, 9,435 ; troopers' horses, 37,912. In the extraordinary expenses special provision is made for the additional horses required for the new batteries of 75-mm. (2-95-inch) guns over and above those required for the old batteries of 70-mm. (2-75-inch) guns, which they replace. The cost of the new artillery has been apportioned as follows :—Budget, 1900-01, £320,000 ; 1901-02, £360,000 ; 1902-03, £100,000 ; and the balance amounting to £1,284,000 in instalments not yet settled, spread over the next three years.

According to the *Esercito Italiano*, the mountain artillery and other Alpine troops in garrison at Turin have received orders to make experiments in marching on skis this year in the neighbourhood of Mont Cenis. These experiments are to last a month, and as a beginning about 40 men left Turin on 7th January for the hospice of Mont Cenis. It is intended, however, that the experiments shall be on a large scale, so as not to leave undiscovered any of the advantages which may be obtained from the use of skis by the troops.—*Times*.

JAPAN.—The Imperial manœuvres took place in Japan on the 7th, 8th, and 9th November last to the north of Sendai, in the Island of Nippon. The general military situation, as laid down, was very simple, and was as follows:—

"A northern force (an invading army), consisting of the 8th Division, in garrison at Hirosaki, lands at Nobechi Bay, at the north end of Nippon, and advances towards the south. A southern force (a defending army), consisting of the 2nd Division, in garrison at Sendai, marches to oppose them."

On the 7th the manœuvres took place under Field-Marshal Ayama, Chief of the General Staff, as the Mikado had not then appeared on the manœuvre ground. On the 8th and 9th the Mikado himself took over the chief direction. Each division was strong and consisted of 2 infantry brigades of 2 regiments each, 3 squadrons, 1 field artillery regiment of 3 groups (one of which was a mountain group, and each group consisted of 2 batteries of 6 guns each), 1 pioneer battalion of 3 companies, 1 transport battalion of 3 companies. Each division was brought up to war strength and had its reservists in the ranks. The commander of the 8th Division, Baron Tachimi, is regarded as an excellent leader, and he greatly distinguished himself in the late Chino-Japanese War at the assault on Pyonyang in Korea. The men of the 8th Division are noticeably taller than the average Japanese, and though somewhat heavy and slow, are well disciplined, of excellent material, and did so well during the three days' manœuvres that they had little difficulty in defeating their enemy.

The work of the infantry of both divisions, however, was a most creditable performance. The Japanese are naturally good infantrymen, and make exceptionally good skirmishers, being light, supple and good runners. It is by no means exceptional for Japanese infantry to march 70 miles in one day, which sounds almost impossible to a European. A Russian general, who was present at the manœuvres, remarked: "The Japanese infantry is almost formidable opponent, even for Europeans."

As regards the cavalry, it certainly does not come up to the European standard. The horse material is bad, and the country is unsuitable for its use, as it consists chiefly of hills and rice-fields, so that movements of that arm are as a rule confined to the roads. The people, too, do not naturally take kindly to riding. The scouting and intelligence duties of the cavalry are not well developed and are slow. The cavalry, too, were too weak in numbers, only three squadrons being allotted to each division. The Japanese horse is certainly not much to look at, but it is capable of great endurance, and the Government is taking steps to improve the breed. Officers, as a rule, ride cross-breeds; the Mikado, however, is a great believer in the home-bred animal, and invariably rides Japanese horses. The artillery was armed with the new Arisaka Q.F. gun, which gave good results; the artillery, however, as well as the cavalry, suffer from a dearth of proper horses. No fault could be found with the Japanese pioneers, and the European officers were astonished at the ease and dexterity with which they threw up fortifications and constructed bridges. It should be noted that for the first time, at these manœuvres, experiments were made with cavalry telegraphs, which succeeded very well. Cyclists, too, did capital service in conveying orders and intelligence.

The march past took place on the 10th, and was, on the whole, good, although the troops are not accustomed to march to music, and the band was specially brought from Tokio for the occasion. There are only three bands in the Army, viz., two at Tokio and one at Osaka, with the 4th Division. The damages caused by the manœuvres were unimportant, as the harvest in the north falls somewhat later than in the south ; the people, too, are so patriotic that many peasants demand nothing, but are, on the contrary, only too glad to be of some service to their country. This year the Imperial manœuvres will take place at Kinshin between the 5th and 11th Divisions (the invading army) and the 6th and 12th Divisions (the defending army).—*Internationale Rerue über die gesammten Armeen und Flotten.*

RUSSIA.—The Russian journals publish, as usual, the Army Budget for the present year. The following table gives the items of expenditure in roubles of 1902 compared with those of 1901 :—

		1902.	1901.
Central Administration	...	2,833,347	2,740,841
Territorial Administration	...	9,880,397	9,372,308
Technical Services and Schools	...	10,106,270	9,769,474
Medical Service and Hospitals	...	4,380,077	4,535,813
Clothing and Equipment	...	20,448,496	25,003,068
Rations	...	48,701,738	46,471,220
Forage	...	18,972,601	18,618,021
Pay	...	71,903,470	72,406,378
Hire and Up-keep of Property	...	22,133,930	21,180,774
Construction	...	24,553,559	25,349,968
Manufacture of Guns and Artillery Material	...	12,776,374	6,000,355
Field, Fortress Artillery, and Gunnery Practice	...	2,965,084	2,838,216
Transport, Change of Station, etc.	...	11,357,047	10,993,373
Expenses of Enrolment of Contingent	...	1,180,895	1,424,038
Calling out of Reserves and Militia	...	2,647,306	2,883,097
Expenses of Government of Turkestan	...	1,404,452	1,387,554
Police Corps	...	4,943,878	3,967,020
Gratuities and Help	...	4,111,333	3,887,935
Retained in hand as a State Relief Fund	...	5,391,674	5,421,188
Extraordinary Expenditure	...	612,243	612,726
Kwantung Peninsula	...	7,088,539	7,340,721
Changes of Armament	...	17,887,610	24,230,133
Various Expenditure	...	2,755,211	2,675,342
Reserve Credit	...	4,707,606	6,325,308
Credit for Requirements for 1903	...	8,595,000	8,595,000
Total	...	322,638,537	324,024,871

The Ministerial War Budget, then, for the present year shows a decrease of 1,386,334 roubles on the Budget of 1901. A glance at the items shows that the chief decrease occurs in the Clothing and Equipment (about 4,500,000 roubles), and in the Changes of Armament (6,500,000 roubles). It may, therefore, be taken as certain that Russia has almost entirely carried out the contemplated change in rifles and revolvers and has been able to re-arm all her reserve units, and also, perhaps, the Militia. The principal increase in the present Budget is in artillery manufacture ; it is known that the Russian Government has adopted a new Q.F. gun, and is at the present time proceeding with the construction of the new matériel.

As the settlement of the Budget has given rise to no public discussion, and has not been the object of any detailed report, it is difficult to gather any information regarding

other less considerable increases and decreases, such as, for instance, the increase of nearly a million roubles for the police. On the other hand, the items Extraordinary Expenditure, Various Expenditure, Reserve Credit, Credit for the Requirements of 1903, would doubtless form an interesting study ; but all details with regard to them are absolutely wanting.—*La France Militaire*.

SERVIA.—*Danzer's Armee-Zeitung* publishes a statement of the Servian military budgets for the 13 years 1890-1902. The budget rose from £384,000 in 1890 to £452,000 in 1893 : then for two years it stood at £492,000, and for three years at £564,000 : in 1899 it rose to £602,800, and in 1900 it reached £801,200, its highest point. In 1901 it went down to £704,000, and the amount estimated for 1902 is £500,000. These fluctuations are not, however, due to military but to political necessity. Each Servian Government finds it necessary to secure the loyalty of the officers of the Army, more especially in times of popular excitement, and the simple expedient is adopted of "rewarding" the officers who show themselves favourable to the Government. Some little time ago, for instance, the number of regiments was doubled ; but this was done without increasing the Army, by making the battalions into regiments without increasing the strength. The commander of a regiment, however, required higher pay than the commander of a battalion, and there were thus some lucrative posts at the disposal of the Government. The causes of political excitement in 1900 no longer exist, with the result that, although the estimated amount of the budget for 1902 shows a great decrease, the men with the colours will still number from 16,000 to 18,000. The expense of rearming the Army will be met by various small loans.—*Times*.

UNITED STATES.—Nearly a year ago, on the 18th May, 1901, we stated the Ordnance Department was experimenting with a new rifle which combined all the good features of the Mauser and the Krag-Jorgenson, and was expected to supersede our present Service rifle. The experiments have been so satisfactory that arrangements are being made to manufacture, at Springfield, 5,000 to be issued to the troops for trial. In a comparison of small arms as to their efficiency based upon a system of coefficients, Captain de Montbrison, of the French Army, places the Krag-Jorgenson seventh on the list, the Dutch rifle, the Roumanian, the Mannlicher, the Spanish rifle the Swedish Mauser, the Italian Carcano-Mannlicher, and the Russian Mossini preceding it in the order named. As the bolt of our new rifle is considerably stronger than that of the Krag, it will withstand stronger pressure with resulting increase in velocity. It is to be of the same calibre as the Krag, so that the change in the Army from one to the other may be gradual and without harm to the efficiency of the Service. The projectiles will have a velocity of 2,300 feet per second, and the piece will be fed by a clip similar to that of the Mauser. The magazine will be located centrally below the barrel, and will be encased in the wooden forearm of the piece. At the Ordnance Department it is claimed that the question of the proper bayonet for a modern rifle has been solved in the new arm. It will have a rod bayonet which is the special invention of an officer of ordnance. In all respects it is claimed by the War Department that the new rifle is to be far better than the Krag.

General Crozier stated in his testimony before the House Military Committee that the Krag might possibly be changed, but he said :—"There is no other kind of gun that is in sight, and the only important improvement that has come to our notice is what

you might call the semi-automatic gun." The defect of the Krag, General Crozier said, is that "the metal is not symmetrically distributed. The magazine is on one side, and, therefore, when the gun is fired, the muzzle throws to the left; as the bullet passes along its trajectory, it drifts to the right, as with all rifles having a right-hand twist. The result is that at short ranges the gun shoots to the left, and at long ranges to the right. So that it is not possible to provide a sight which will compensate for both deviations." Otherwise it is a thoroughly serviceable weapon.

It is evident from the following circulars, issued by Brigadier-General J. Franklin Bell, U.S.A., commanding in Batangas province, Island of Luzon, that experience has convinced him that nothing short of the most rigorous military measures will crush the insurrection in that hot-bed of Tagalog treachery and crime. General Bell is an officer of the highest courage and intelligence whose record in the Philippines is a story of ceaseless activity and splendid results in support of American authority. He has been in Batangas for months. He is acquainted with the Tagalogs and their ways. He has personally studied the situation in all its bearings, and if it cannot be said of him that he knows just what he is talking about, then there is no man in the Army of whom it can be said. The subjoined circulars show that half-way measures in dealing with the insurgents are futile and almost suicidal. The enemy must be taught what war really means. Major-General Chaffee in recent orders declared that there was widespread organised treachery among the Tagalogs. These conditions fully justified the radical measures which have been adopted to crush the revolt in Batangas. General Bell's circulars are as follows:—

Telegraphic Circular No. 2, Batangas, 8th December, 1901.

To all Station Commanders : In order to put an end to enforced contributions, now levied by insurgents upon the inhabitants of sparsely settled and outlying barrios and districts, by means of intimidation and assassination, commanding officers of all towns now existing in the provinces of Batangas and Laguna, including those at which no garrison is stationed at present, will immediately specify and establish plainly marked limits surrounding each town bounding a zone within which it may be practicable, with an average sized garrison, to exercise efficient supervision over and furnish protection to inhabitants (who desire to be peaceful) against the depredations of armed insurgents. Those limits may include the barrios which exist sufficiently near the town to be given protection and supervision by the garrison, and should include some ground on which live-stock could graze, but so situated that it can be patrolled and watched. All ungarrisoned towns will be garrisoned as soon as troops become available.

Commanding officers will also see that orders are at once given and distributed to all the inhabitants within the jurisdiction of towns over which they exercise supervision, informing them of the danger of remaining outside of these limits, and that unless they move by 25th December from outlying barrios and districts with all their movable food supplies, including rice, palay, chickens, live stock, etc., to within the limits of the zone established at their own or nearest town their property (found outside of said zone at said date) will become liable to confiscation or destruction. The people will be permitted to move houses from outlying districts should they desire to do so, or to construct temporary shelter for themselves on any vacant land without compensation to the owner, and no owner will be permitted to deprive them of the privilege of doing so.

In the discretion of commanding officers the prices of necessities of existence may also be regulated in the interest of those thus seeking protection.

As soon as peaceful conditions have been re-established in the territory of this brigade, these persons will be encouraged to return to their homes, and such assistance be rendered them as may be found practicable.

J. F. BELL. Brigadier-General Commanding.

Telegraphic Circular No. 3, Batangas, 9th December, 1901.

To all Station Commanders : A general conviction, which the brigade commander shares, appears to exist that the insurrection in the territory of this brigade continues because the greater part of the people, especially the wealthy ones, pretend to desire but in reality do not want peace. That when all really want peace we can have it promptly. Under such circumstances it is clearly indicated that a policy should be adopted that will as soon as possible make the people want peace, and want it badly.

It is an inevitable consequence of war that the innocent must generally suffer with the guilty, for when inflicting merited punishment upon a guilty class it is unfortunately at times impossible to avoid the doing of damage to some who do not individually deserve it.

For reasons here indicated, which are well known to all, and chief of which are the delay and difficulty in ascertaining the exact truth, it will be impossible to wage war efficiently, and at the same time do abstract justice in operations unquestionably essential to putting down an insurrection which has long continued in the territory of this brigade.

Natural and commendable sympathy for suffering and loss and for those with whom friendly relations may have been maintained, should therefore take a place subordinate to the doing of whatever may be necessary to bring a people, who have as yet not felt the distressing effect of war, to a realised sense of the advantages of peace.

War in the disturbed portions of the territory of this brigade, and, when manifestly necessary, in these portions supposed to be peaceful or which are under civil government, will be conducted in accordance with the provisions of G.O. 100, A.G.O., 1863, which publishes instructions for the government of armies of the United States in the field. The provisions of this order will be directly adhered to, but no station commander will put anyone to death as a measure of retaliation for assassination under sections 27, 28, 34, and 148, without obtaining authority from a superior commander, nor will the death penalty be inflicted in any case without similar authority.

Commanding officers are urged and enjoined to use their discretion freely in adopting any or all measures of warfare authorised by this order which will contribute in their judgment toward enforcing the policy or accomplishing the purpose above announced.

It is not necessary to seek or wait for authority from these headquarters to do anything or take any action which will contribute to the end in view. It is desired that sub-district commanders accord to their subordinate officers and commanders a degree of confidence and latitude in operations similar to that herein conferred upon them. Such restraint and supervision only should be exercised as is dictated by sound discretion, and as may be essential to securing concert of action and co-operation when desirable, adherence to authorised methods, and a uniform policy and harmonious action in working for a common end. Subordinate commanders and young officers of experience should not be restrained or discouraged without excellent reason, but

should be encouraged to hunt for, pursue, and vigorously operate against armed bodies of insurgents wherever they may be found.

Except when the advantage in position and numbers is overwhelming on the side of the enemy, our troops should always assume the offensive and advance on and pursue them vigorously. The best defence against these people is to assume a vigorous offensive at once. To retire in the presence of this enemy is generally hazardous and discouraging to our troops. . . .

Nothing herein contained will be so interpreted as to warrant or arouse carelessness or a lack of well-known and proper precautions. Though troops should be aggressive, they should be military in methods, and precautions against surprise and ambush should never be neglected.

In addition to maintaining active operations against armed bands of insurgents, persistent and systematic efforts will be made through the use of spies, loyal police, native scouts, intelligence officers, provost marshals, and provost courts to discover, apprehend, and punish all agents, collectors, organisers, contributors, and sympathisers who secretly aid, assist, and extend encouragement or comfort to those in arms. Many such persons will unquestionably be found among municipal officials and councils and *tenientes de cabezas de barrios*. [Lieutenants of the heads of *barrios*.—ED.]

It is so probable as to amount almost to a certainty that the election of all town officials in the province of Batangas and Laguna have been dictated by Malvar or other insurgent leaders, and that they would never have been permitted to discharge their functions without molestation had they not continued to be subservient to the will of the insurgent leaders and been acting as their agents, or at least have done nothing inconsistent with their interests.

The only acceptable and convincing evidence of the real sentiments of either individuals or town councils should be such acts publicly performed as must inevitably commit them irrevocably to the side of Americans by arousing the animosity and opposition of the insurgent element. Such acts are reliable evidence, but mere words are worthless. No person should be given credit for loyalty simply because he takes the oath of allegiance or secretly conveys to Americans worthless information and idle rumours which result in nothing. Those who publicly guide our troops in operations against the enemy, who denounce and assist in arresting the secret enemies of the Government, who publicly obtain and bring reliable and valuable information to commanding officers, those in fact who publicly array themselves against the insurgents and for Americans, should be trusted and given credit for loyalty, but no others. No person should be given credit for loyalty solely on account of his having done nothing for or against us so far as known. Neutrality should not be tolerated. Every inhabitant of the territory of this brigade should either be an active friend or be classed as an enemy. . . .

Presidents and chiefs of police against whom sufficient evidence can be found to convict them before a court of violating their oaths by acting as agents for insurgents, or by aiding, assisting, or protecting them in any way, should be arrested and confined, and should ordinarily be tried by Military Commission. Charges should be preferred and forwarded with that in view. Other town officials guilty of similar offences might be tried by provost courts, unless their offence be too grave for adequate punishment thereby.

Another dangerous class of enemies are wealthy sympathisers and contributors who, though holding no official positions, use all their influence in support of the insurrection, and while enjoying American protection for themselves, their families, and property, secretly aid, protect, and contribute to insurgents. Chief and most

important among this class of disloyal persons are native priests. It may be considered as practically certain that every native priest in the provinces of Batangas and Laguna is a secret enemy of the Government, and in active sympathy with insurgents. These are absolutely our most dangerous enemies—more dangerous even than armed insurgents—because of their unequalled influence. They should be given no exemptions whatever on account of their calling. On the contrary, whenever sufficient evidence is obtainable they should be brought to trial. Should well-founded suspicion rest against them, in the absence of competent evidence, they should be confined and held as a necessary military precaution to preclude further activity or bad influence on their part.

The same course should be pursued with all of this class, for to arrest anyone believed to be guilty of giving aid or assistance to the insurrection in any way or of giving food or comfort to the enemies of the Government, it is not necessary to wait for sufficient evidence to lead to conviction by a court, but those strongly suspected of complicity with the insurrection may be arrested and confined as a military necessity and may be held indefinitely as prisoners of war in the discretion of the station commander or until receipt of other orders from higher authority. It will frequently be found impossible to obtain any evidence against persons of influence as long as they are at liberty, but once confined, evidence is easily obtainable. . . .

The apprehension and punishment of one individual of the above-mentioned classes (men of wealth and standing and officials) is of greater importance and will exercise greater influence than the punishment of a hundred ignorant *hombres* for whose suffering no principe cares a straw. The wealthy and influential, and town and insurgent officials are therefore those against whom our most energetic efforts should be directed. The common people amount to nothing. They are merely densely ignorant tools who blindly follow the lead of the principales. When guilty they must be arrested and confined, in order to put an end to further activity on their part, but whenever it is possible to reach their chief or leader through their testimony they may be promised immunity from trial for such simple offences, as aiding and assisting, or being insurgents. They should not be released, however, unless they are willing to demonstrate their loyalty by public participation in operations against their former leaders.

The policy herein indicated need not be applied, should commanding officers be convinced it is inadvisable, in these portions of the territory of this brigade where peaceful conditions have been completely re-established, as in Marinduque for example. Discretion should also be exercised as to the degree of rigour to be employed in its enforcement in those portions of the territory of the brigade where civil government exists and where no organised insurrection or intrigue is discoverable.

Wherever the constabulary have been organised, cordial co-operation will be extended to and solicited from them. Commanding officers will promptly transmit by wire to other commanding officers any information which may possibly be of assistance to them, and are expected to seek co-operation and concert of action from each other whenever such may appear to be desirable.

J. F. BELL, Brigadier-General Commanding
—U. S. Army and Navy Journal.

NAVAL AND MILITARY CALENDAR.

JANUARY, 1902.

- 1st (W.) 2 squadrons 20th Hussars
" " 2½ companies 2nd Bn. Royal Munster Fusiliers } Arrived at Cape Town from India on the "St. Andrew."
- 2nd (Th.) 1 squadron 3rd Hussars
" " 2 squadrons 20th Hussars
" " 1½ companies 2nd Bn. Royal Munster Fusiliers } Arrived at Cape Town from India on the "Custodian."
- 3rd (F.) H.M.S. " Pearl" left for the Cape.
" " 1st Bn. Devonshire Regiment } Left South Africa for India
" " 2nd Bn. Gordon Highlanders } on the " Armenian."
- 4th (Sat.) Lord Kitchener reported that General Bruce Hamilton captured 100 Boers, including General Erasmus, and that a party of the Scots Greys had been ambushed near Bronkhorstspruit, but drove off the Boers after two hours' fighting.
- 6th (M.) Lord Kitchener announced that General Bruce Hamilton had captured 69 Boers near Amsterdam, and that the South African Constabulary had captured 35, and killed 11 Boers.
" " Q Battery R.H.A. arrived in England from Cape Town on the " Ranee."
- 7th (T.) Lord Kitchener reported an engagement between General Plumer and Chris. Botha. British losses 19 killed and 33 wounded.
- 8th (W.) 34th Brigade Division R.F.A. left Bombay for England in R.I.M.S. " Hardinge."
- 9th (Th.) 3rd Bn. Royal Warwick Regt. (Militia)
" " 3rd Bn. the King's (Liverpool Regiment) (Militia) } Arrived at Cape Town from England on the " Plassy."
- " " The War Office asked for 10,000 more Infantry Volunteers.
- 10th (F.) Launch of torpedo-boat destroyer " Asashio" from Messrs. Thornycroft's Yard at Chiswick for Japanese Government.
" " 4th Bn. King's Royal Rifle Corps arrived at Cape Town from Ireland on the " Roslin Castle."
- " " A revolution broke out in Paraguay. President Aceval was arrested.
- 11th (Sat.) H.M.S. " Dido" paid off at Chatham.
" " 3 squadrons 3rd Hussars
" " 4 companies 2nd Bn. Royal Munster Fusiliers } Arrived at Cape Town from India on the " City of Vienna."
- " " Colonel Wing surprised a laager near Ermelo, and captured 42 Boers, including Major Wolmarans and two other officers of the Staats Artillerie.

- 13th (M.) The Boer General Opperman was killed in an engagement with General Plumer at Onverwacht.
 .. 3rd Bn. Highland Light Infantry (Militia) Arrived at Cape Town from England on the "Aurania."
 .. 3rd Bn. York and Lancaster Regiment (Militia)
- 14th (T.) H.M.S. "Grafton" commissioned at Chatham.
 H.M.S. "Cockatrice" arrived at Devonport from Mediterranean.
 Lord Kitchener reported the narrow escape of Commandant-General Botha after a 7 hours' chase by General Bruce Hamilton, who captured 33 prisoners.
 The rebrigading of Volunteer Infantry was notified by the Adjutant-General.
 A resolution was passed in the Australian Federal House of Representatives repudiating the calumnies against the British Army, and promising further aid to the mother country to end the war.
 6th Bn. Worcestershire Regiment (Militia) arrived at Cape Town from England on the "Manila."
 470 officers and men, Canadian Mounted Rifles, left Halifax for South Africa on the "Manhattan."
- 15th (W.) H.M. the King inspected a large draft (1,200) of the Guards' Brigade prior to their departure for South Africa.
- 17th (F.) H.M.S. "Melita" paid off at Devonport.
 5th Bn. Rifle Brigade (Militia) arrived at Cape Town from England on the "Wakool."
- 18th (Sat.) H.M.S. "Isis" paid off at Chatham.
 3rd Bn. King's Own Royal Lancaster Regiment (Militia) left Cape Town for England on the "Tintagel Castle."
 General Bruce Hamilton captured 27 Boers belonging to Botha's commando.
- 21st (T.) H.M.S. "Barfleur" paid off at Devonport.
 H.M.S. "Espiegle" commissioned at Sheerness for China.
 Sir M. Hicks-Beach stated in the House of Commons that £46,300,000 had been paid out of the Treasury for the prosecution of the South African War from April 1st to December 1st, 1901.
- 22nd (W.) Lord Kitchener reported that Lord Methuen had captured a Boer laager and 24 prisoners.
 1st Bn. Devonshire Regiment Arrived at Bombay from South Africa on the "Armenian."
 2nd Bn. Gordon Highlanders
- 23rd (Th.) Launch of torpedo-boat destroyer "Kasumi" from Messrs. Yarrow's Works, at Poplar, for Japanese Government.
 Lord Kitchener announced that 25 Yeomanry had been surprised and captured by the Boers near Lindriquespruit.
 3rd Bn. Cheshire Regiment (Militia) Left Southampton for South Africa on the "Oratava."
 4th Bn. The King's (Liverpool Regiment) (Militia)
- 24th (F.) 2nd Bn. Royal Inniskilling Fusiliers left Bombay for South Africa on the "Armenian."

- 25th (Sat.) Announced that Beyers had penetrated the Concentration Camp at Pietersburg and had released a large number of surrendered prisoners.
- " " A communication was received by the British Government from the Dutch Government.
- 26th (S.) Lord Kitchener reported the capture by Colonel Sir H. Rawlinson with R.H.A. Mounted Rifles, of 30 Boers of Strydon's commando near Kopje Aileen, and of Commandant Hans Botha by a party of National Scouts near Welverdien : also that General B. Viljoen had been captured near Lydenburg with two of his adjutants.
- " " Announced that the Boer General Vilonel had been granted permission to raise a Burgher Corps, 1,500 strong, to fight for the British.
- 27th (M.) H.M.S. " Grafton " left Sheerness for the Pacific.
- " " Lord Kitchener reported that General Plumer had captured 56 Boers near the blockhouse line ; that General Spens' column had captured a Boer laager and 70 prisoners ; and that Major Driscoll, near Makawa's Drift, took a small laager and 17 prisoners, including Field Cornets Venter and Grobelaar.
- " " 34th Brigade Division R.F.A. arrived at Southampton from India on R.I.M.S. " Hardinge."
- 28th (T.) A Supplementary Estimate for £5,000,000 for war expenditure was laid on the table of the House of Commons.
- " " Lord Kitchener reported a brilliant march by General Bruce Hamilton, and the capture of a Boer laager at Nelspan.
- " " Colonel du Moulin was killed in a fight with Niewhondt's commando at Abraham's Kraal.
- " " Remainder of Canadian contingent of Mounted Rifles (3 squadrons) left Halifax for South Africa on the " Victorian."
- " " 3rd Bn. The Buffs (East Kent Regiment) (Militia) left Cape Town for St. Helena on the " Arundel Castle."
- 29th (W.) 1st detachment 8th New Zealand contingent (500 officers and men) left Sydney for South Africa on the " Surrey."
- " " 2nd Bn. Royal Dublin Fusiliers left Durban for Aden on the " Sicilia."
- 30th (Th.) The Committee's report on Hungarian horses for South Africa was issued.
- 31st (F.) An Army Order was promulgated regarding officers' uniform in the Regular and Militia forces.
- " " Lord Kitchener reported that 26 members of Fouché's commando had been captured.
- " " 5th Bn. Royal Dublin Fusiliers (Militia) left Cape Town for Ireland on the " Pembroke Castle."

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NAVAL.

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FRANCE.—*Revue Maritime*. Paris: January, 1902.—“Comparison between the Budgets of the Naval Powers.” “Chronicle of Lorient, 1792-1800” (*concluded*). “The Valley of the Yangtse - Kiang.” “The New Fast Russian Cruisers.” “Description of the 7-5-inch Q.F. Vickers-Maxim Gun.” “Plans for a New War-ship for the U.S. Navy.” “Foreign Naval Notes.”

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La Marine Française. Paris : 1st January, 1902.—“State Dockyards.” “Boilers in Foreign Navies.” “Torpedo-boats or Destroyers.” “The Russian Mercantile Marine.” “Foreign Naval Notes.” 15th January.—“Note on the Projected New Organisation of the Corps of Engineers.” “The Boiler Question in England.” “A Russian Opinion on Torpedo-boat Attack.” “Foreign Naval Notes.”

GERMANY.—*Marine-Rundschau.* Berlin : February, 1902.—“The Strategical Duties of Vice-Admiral Brueys’ Squadron during Bonaparte’s landing in Egypt and his Tactics at Aboukir.” “A Visit to the German Fleet in 1849.” “Our Coast Artillery.” “The Question of the Training of Under-Officers in the Russian Navy.” “Divine Service on board H.I.M. Ships.” “Medical Report on the Naval War between China and Japan, 1894-95.” “The War-Training of the English Navy,” translated from the *Times*. “Foreign Naval Notes.”

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January, 1902.—Has not been received.

Revue de Cavalerie. January, 1902.—Has not been received.

GERMANY.—*Militär-Wochenblatt.* Berlin : 1st January, 1902.—"Dragomiroff's Field Service Regulations and Battle Instructions for all Units of the Service" (with sketches). "From the French Field Artillery" (with plates). 4th January.—"Field-Marshal Count von Blumenthal." "Dragomiroff's Field Service Regulations and Battle Instructions for all Units of the Service" (*continued*). "From the French Field Artillery" (*concluded*). 8th January.—"Scouting." "Dragomiroff's Field Service Regulations and Battle Instructions for all Units of the Service" (*concluded*). "Balloon Drill Regulations." "Lieut.-Colonel von Schlutterbach." 11th January.—"The Cadet Corps and its Object." "The Boer War—2nd Part" (*continued*). "The Latest from the Anglo-Indian Army." 15th January.—"A New Edition of a Lampoon on Frederick the Great." "A Trajectory Key." "Military Intelligence from Switzerland." "The Bill for the Amelioration of the Status of Subaltern and Non-Commissioned Officers in Italy." 18th January.—"The Royal Saxon Army List for 1902." "A New Edition of a Lampoon on Frederick the Great" (*concluded*). "Cross-Country Racing." 22nd January.—"In the Days of Frederick : The Last Reviews of the Great King." "The Use of Automobiles in War." "History of the Russo-Turkish War from 1877 to 1878." 25th January.—"Studies of the History of War and Tactics." 29th January.—"Preparatory Movements, Disposition, and Scouting of Cavalry." "The Boer War—2nd Part" (*continued*).

Neue Militärische Blätter. Berlin : January, 1902.—Has not been received.

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ITALY.—*Rivista di Artiglieria e Genio.* Rome : December, 1901.—"How, if possible, to Prepare the Patrols of Field Artillery?" "Studies and Comparative Trials in the Manufacture of Chemical Cement." "The Air-Ship 'Italia' of Signor di Vicenza." "Tactical Use of the French Q.F. Artillery." "Krupp Material for Q.F. Field Guns and Mountain Q.F. Guns." "South African Blockhouse."

Rivista Militare Italiana. Rome : January, 1902.—"On the Moral Education of the Soldier." "On Advance Guards." "The Offensive in Savoy : Campaign of 1793." "A Glance at the Actual State of Military Cartography in the Various European Countries" (*continued*). "The New Infantry Regulations of the Austrian Army." "On the Article : 'Automobiles and their Use in War.'" "The Asylum of Peace according to a Russian Writer."

PORtUGAL.—*Revista de Engenharia Militar.* Lisbon : December, 1901.—“On the New Engineer Companies.” “The Walls of Lisbon” (*continued*). “A Portable Heliograph.”

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RUSSIA.—*Voiénnnyi Sbórnik.* St. Petersburg : November, 1901. — “The Northern Campaign—Summer Campaign of 1708” (*continued*). “Contribution to the History of the Kokan Expedition” (*concluded*). “Regimental History.” “Instructions of 1901 for Operations in the Field for Detachments of all Arms.” “Notes on Staff Service” (*continued*). “Is Independent Cavalry really Independent?” “Masses as the Chief Factor of Artillery Tactics.” “Unification of Mutual Aid Societies” (*concluded*). “Bulgarian News.” “Leisure in Corea in 1897.” “Instructions Determining the Military Education and the Organisation of the Interior Economy of Junker Schools.” “The Armed Forces of Japan in 1891.” “War.”

December, 1901. — “The Northern Campaign—Summer Campaign of 1708” (*concluded*). “Russian Expedition to Georgia and Imerita in 1769–1771” (*concluded*). “The Latest Tendencies of the German Army.” “Notes on Staff Service” (*concluded*). “The Question of Artillery Reconnaissance.” “Imperial Review at Oust-Ijora on the 28th July, 1901.” “Contradictory Orders and their Military Consequences.” “In the King’s Service” (*continued*). “Instructions Determining Rules for the Military Education and the Organisation of Interior Economy in Junker Schools” (*concluded*). “Regulations on the Commissariat Course of Instruction.” “Latest Measures for the Organisation of the German Army.” “War.”

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SPAIN.—*Memorial de Ingenieros del Ejército.* Madrid : December, 1901.—“The Practical School of the 2nd Regiment of Sappers and Miners.” “The Practice of Ballooning.” “Charcoal Exhibition at Barcelona” (*continued*). “New System of Sleepers for Railroads.” “Importance of Electric Verifications.” “Foreign Military Notes.”

Revista Técnica de Infantería y Caballería. Madrid : 1st January, 1902.—“Spanish Dominations and Wars in the Low Countries.” “Tactics by Commandant Burguete.” “Armies and Militias.” “New Tactical Regulations for Infantry.” “How to Re-organise our Military System.” 15th January.—Has not been received.

SWITZERLAND.—*Revue Militaire Suisse.* Lausanne : January, 1902.—“Military Insurance against Sickness and Accidents.” “The New Drill Regulations for the Austro-Hungarian Troops.” “Trials of Automobiles at the Swiss Grand Manoeuvres of 1901.” “Draft of Regulations for Drill and Manoeuvres of the French Army.” “The Manoeuvres of the Hind Army Corps.” “The French 75-mm. Gun.”

UNITED STATES.—*The Journal of the Military Service Institution.* Governor's Island, New York : January, 1902.—“The Utilisation of Native Troops in our Foreign Possessions.” “The Action of San Mateo—Death of General Lawton” (maps). “Characteristics of the Campaigns of Frederick, Napoleon, and Moltke.” “Peace Preparations for War Duties, Corps of Engineers.” “Selection of Suitable Military Stations in the West Indies.” “The Signal Corps in Sea-Coast Defence.” “Military Rewards in the United States.” “The Service Magazine.” “The Cavalry Question.” “Translations and Reprints.” “Comment and Criticism.” “Reviews.”

NOTICES OF BOOKS.

Krieg und Heerführung. By COLMAR FREIHERR VON DER GOLTZ, General of the Royal Prussian Infantry, Chief of the Engineer and Pioneer Corps, General-Inspector of Fortresses, formerly Marshal and General-Adjutant in the Imperial Ottoman Army. Berlin : R. von Decker. 1901.

It is hardly necessary to say that this book deserves close study and consideration; every page contains evidence of the author's wide reading and experience; but viewed as a whole we must confess to a feeling of profound disappointment—for the author has fallen into the common fault of generalising from insufficient *data*, and has accepted the somewhat highly-coloured versions of our recent South African experiences current in Germany, as evidence confirming the opinions of those who maintain the good old fallacy of the virtues of the tactical defensive.

The influence of Boer mobility on the conduct of our operations he practically ignores, though from start to finish this has been the ruling condition which has regulated the course of all our engagements, accounting for the absence of decisive results on our part, and for the apparent difficulties we encountered in our frontal attacks.

He appears to imagine that we fought under ordinary European conditions of time and space, handling our troops as we should have handled them against a European enemy; and since we have very little to show in the way of prisoners, guns, etc., as the result of our actions, he concludes that therefore the methods of attack common to all European Armies are no longer sufficient to cope with the resistance they may encounter, and hence that the new weapons (they being the only "variable" in the problem) have as a fact transformed the nature of the battle-field, though curiously he admits that they favour the attack in a siege—overlooking the fact that a battle is only an abbreviated siege.

Assume the two forces, Boers and British, armed only with bows and arrows, but retaining their relative rates of mobility, viz., in Natal at 5 to 1, would the armament have made any essential change in the course of events? We venture to think it would not, for bows and arrows would not have altered the depth of the Tugela, and the enemy from his deliberately selected positions could have equally well detected our turning movements and formed new fronts to meet them. Had we pressed our attacks home, the Boers would have mounted their ponies and slipped away—precisely as they did against the Lee-Metfords—to take up a new position further to the rear.

Since, once it was known that Ladysmith was not seriously pressed for provisions, time became an element of minor importance, it was sound common sense, though not perhaps from a broader stand-point the best policy, to wait until, by the arrival of fresh reinforcements, the Boers could be drawn away to another theatre of operations, as there was no imperative object to sacrifice men unnecessarily. When the fresh reinforcements ultimately arrived in the Orange Free State, our one object became, not to press home attacks which would have forced the Boers to avail themselves of their superior speed to retire, but merely to hold them engaged whilst our own mobile troops swept round and enveloped them, as at Paardeberg. Again,

owing to our relative want of mobility, it would have been both unwise and impracticable to attempt direct European attacks. We were disappointed in the mobility of our mounted forces, hence the absence of any repetition of Paardeberg during the subsequent stages of the war, but the idea of "rounding the enemy up" was always there and was the only sound one to adopt under the circumstances.

Now imagine the Boers with infantry, cavalry, and artillery, in the usual proportions; then because the infantry could not mount and slip away as was their custom, when our attacks came on, they would have been compelled to put in as many rifles to the front as we could oppose to them, *i.e.*, instead of covering ten miles with 5,000 men they would have held only one; but 5,000 men to the mile cannot be as rapidly concealed and covered as 500; our bullets therefore would have made more hits and the advantage of invisibility would have been greatly lessened.

Moreover, a line one mile long is more easily turned than one of ten: turning movements would have been more practicable, and so on throughout the whole chain of action and re-action, until at last we should have had to fight it out precisely as von der Goltz himself advised us in his "Independent Patrols," which appeared about 1887, and took full account of smokeless powder and magazine fire as these matters were understood at the time; and it is curious that he has not noticed that practically all our fights since Magersfontein actually were carried out in strict conformity with the views he enunciated for the introductory stages of a battle in the aforesaid pamphlet.

If then the practical experiences of the South African campaign afford no support to those who, with von der Goltz, favour the tactical defensive, from what other sources does he derive his inspiration? Surely not from the "cold theorists of the practice ground," for they at least found out long ago that though you might halve the time required for the mechanical operations of loading, you could neither halve the time required for accurate aiming nor double the nerve control of the aimers. Actually the maximum relative gain in intensity of fire due to the new weapons in a given time cannot be shown to exceed the proportion of six to five; but other causes familiar enough to the students of fortification, in which subject our author as "Chef" of the Engineer and Pioneer Corps ought to be an expert, have combined to neutralise even this small gain in possible intensity.

From the very first introduction of long-range rifled artillery, it became very obvious to those charged with the defence of fortresses that their difficulties had been greatly enhanced by the enormous increase in the area of ground available for the choice of the assailants' batteries. This area is proportional to the area of the circles commanded by the guns, and hence varies as the square of their ranges. Taking these ranges at 1,500 and 7,500 yards respectively, as 1 to 25, in other words the attack has nowadays 25 times the chance of accumulating unseen a superior fire power over the defender as formerly. The uncertainty therefore as to the point on which the blow will fall has increased in a similar ratio, and the same holds good whether against permanent or field defences or none.

At the same time, the arc of the perimeter on which a line of fire can be developed has increased directly as the range. So that the uncertainty is not only greater but the blow itself which may fall whether on front or flank has also increased very considerably, and to meet this the tendency towards the increase of reserves which can only be met by the weakening of the firing line has been pushed to such extremes, that very generally not more than half the number of rifles will be found in the fighting line that was customary even as late as 1870; but, as we have seen, the practical gain in fire power of the new weapons is only as 6 to 5, not 2 to 1. Further, it does

not appear practicable in view of the immense increase in the power of artillery to increase this number except in very special cases, because more men in the front means heavier profiles, and heavier profiles are relatively far more difficult to conceal than lighter ones.

Again, we are now in Europe everywhere face to face with a practical equality in infantry weapons. It is not therefore to be anticipated that the attack will ever again be called on to traverse, unsupported by its own fire, zones of ground 1,000 to 1,500 yards in width as in 1870. Hence, if under the conditions of that campaign, 5,000 rifles to the mile proved insufficient to stop all such attacks as were properly prepared and combined, where is the reason to suppose that half that number or less will suffice now that these all-important conditions which so materially increase the power of secret combination and of an overwhelming blow have received such important modifications?

Ignoring these considerations, von der Goltz has involved himself in a quite unnecessary dilemma. Admitting the all-importance of a rapid mobilisation and the consequent necessity of a bold strategic offensive to utilise its advantages, he is confronted with the difficulty that an offensive strategy cannot be divorced from the tactical offensive, and yet the tactical offensive has no theoretical prospect of success. What then is the unfortunate Commander-in-Chief to do? We can only suggest that in the interests of his Army he should resign his command into the hands of some other man who has better apprehended the drift of recent military evolution and has realised all that is contained in the phrase, "a battle is only an abbreviated siege."

The Siege of the Peking Legations. Being a Diary of the Rev. ROLAND ALLEN, M.A.
With Maps and Plans. London : Smith, Elder & Co. 1901.

The author had been attached to the British Legation for five years, and therefore was competent to give much information upon that problem which is taxing the intelligence of all Christendom—the apprehension of the Chinese character. It is certain that one of the first essentials needed in furthering political negotiations is a correct estimate of the character of a nation and of its rulers. Mr. Allen's book has thrown some additional light upon this intricate subject, which is puzzling Europe at the present time. His narrative of the siege is exceedingly graphic, and with the assistance of plans he has given us a good understanding of the precise situation of the legations and of the Chinese Christian refugees throughout the siege.

Mr. Allen does not condemn the Boxers—he rather pities them. He tells us that the society is more than a century old : its name, "I Ho Ch'uan, or Fist of Righteous Harmony," implies that they are ready to support the cause of peace and righteousness, if necessary, by force. Although suppressed by the authorities for many years, it had been fanned into life by the recent appropriations of Chinese territory by several European nations, notably Russia and Germany, although the French and ourselves cannot claim to be perfectly clean-handed in the matter. The re-action had been encouraged by many leading Chinese, and even by the Dowager Empress herself. The author gives us some insight into Mandarinism—the attempt to persuade the legations to evacuate Peking and march to Tientsin under the protection of the Imperial soldiery was only frustrated by the too precipitate murder of the German Ambassador ; the negotiations with the authorities during the preliminaries to the actual attack by Imperial troops was fraught with evasions, subterfuges, and false accusations. It may be taken for granted that if the masses were not influenced, as they are, by self-seeking Mandarins there would be no Chinese question at all. The latter not only

plunder the people to enrich themselves, but they embroil them with Europeans in order that their vicious ends may not be frustrated by healthy counsels.

We are given much information in regard to the Chinese themselves. The kindness of their character was exemplified frequently during the siege; the refugees voluntarily undertook the domestic work of the several legations, as well as the heavy work entailed by the creation of barricades and trenches in the height of the summer season, when it would have been impossible for Europeans to work. It is true that the legation servants deserted, but that was only natural when it is remembered that their families and friends lived in Peking and that in accordance with *olo casson*, the belongings of a Chinaman are made to suffer for his sins. During the armistice the people were most demonstrative in their show of good feeling to the besieged; they stood on their house-tops making professions of friendship, which Mr. Allen believed they really felt. It was only a day or two afterwards that the most serious assaults were made, which were no doubt provoked by the news that their armies had been defeated by our advancing relief forces. Mr. Allen thus unburdens his soul:—"In the face of the incomprehensible background of thought in the Chinese mind, I felt doubly disgusted when I heard people talk of the Boxers and Chinese in our sweeping denunciation as devils and monsters of iniquity. They seem to me to have done nothing morally worse than the French did at the Revolution, nothing morally worse than we did when we burnt witches alive." Before we can hope to make any real headway with our negotiations in China, it is obviously an essential point that we should understand the characteristics of the nation, and this book is evidently written with that object in view. If others will follow so good an example, we may hope in course of time to begin to understand something about the Chinese.

La Guerre au Transvaal. 2nd Vol. By Lieut.-Colonel FROCARD and Capitaine PAINVIN. Paris: Cerf, 1901. 3 fr. 50 c.

Last year the same authors published, under the title "The Boer Offensive," a sketch of the origin of the war from a Continental point of view, and a picture of the military events which took place between September, 1899, and January, 1900. The volume now presented to the public is the history of the "English Invasion," and brings the reader up to the commencement of the present year, giving a comprehensive glance on the character of the resumption of hostilities which had as a development the present guerilla warfare. Similar to the preceding one the present volume reproduces, in part, a series of articles which appears in the *Revue du Cercle Militaire*; these articles have, however, been revised, useless details have been eliminated, whilst greater stress has been laid on others. The pages in which the authors have studied the question of supplies, the working of railways, and the medical services, too frequently neglected in the study of campaigns, will be perused with the greatest interest. A statement is given, with figures supporting it, of the deadly effect of modern fire-arms, and destroying of the fable of the humane bullet.

PRINCIPAL ADDITIONS TO LIBRARY DURING JANUARY, 1902.

Papers and Addresses, Naval and Maritime, from 1872 to 1893. By LORD BRASSEY. Arranged and Edited by Captain S. EARDLEY-WILMOT, R.N. 2 Vols. 8vo. London, 1894.

Sepoy Generals. By G. W. FORREST, C.I.E. 8vo. 6s. London, 1901.

Autobiography of Lieut.-General Sir Harry Smith. By G. C. MOORE SMITH. 2 Vols. 8vo. 24s. London, 1901.

La Guerre au Transvaal. By Lieut.-Colonel FROCARD and Capitaine PAINVIN. Vol. I.: L'Offensive des Boers. Vol. II.: L'Invasion Anglaise. 8vo. Paris, 1900-1.

Types of Naval Officers. By Captain A. T. MAHAN, U.S.N. 8vo. London, 1902.

Operations of General Hutton's Force, South African Campaign, 1900. Itinerary Maps and Plans of Engagements. Imp. 8vo. London, 1901.

A Sailor of King George. The Journals of Captain Frederick Hoffman, R.N., 1793-1814. By A. BECKFORD BEVON and H. B. WOLRYCHE-WHITMORE. 8vo. London, 1901.

The Discovery of the Solomon Islands, by Alvaro de Mendana in 1568. By Lord AMHURST OF HACKNEY, and BASIL THOMSON. Hakluyt Society. 2 Vols. 8vo. London, 1901.

The Life of Napoleon I. By J. HOLLAND ROSE. 2 Vols. 8vo. 18s. London, 1902.

Standing Orders of the 14th (King's) Hussars. Crown 8vo. London, 1891.

The Strange Adventures of Andrew Battell of Leigh in Angola and the adjoining Regions. Edited by E. G. RAVENSTEIN. Hakluyt Society. 8vo. London, 1901.

The Land of the Blue Gown. By Mrs. ARCHIBALD LITTLE. 8vo. London, 1902.

Royal Canadian Artillery. With the Guns in South Africa. By Lieutenant E. W. B. MORRISON. Crown 8vo. Hamilton, 1901.

Reminiscences and Opinions of Sir Francis Hope Doyle, 1813-1885. By Sir FRANCIS HASTINGS DOYLE. 8vo. London, 1886.

Campagne de Pologne. By Capitaine FOUCART. 8vo. Paris, 1882.

The Journal of the Royal Agricultural Society. Vol. LXII. 8vo. London, 1901.

Carnet de Campagne. By Colonel DE VILLEBOIS-MAREUIL. 8vo. London, 1902.

Les Méthodes de Guerre actuelles et vers la fin du XIX^e siècle. By General PIERRON. Tome II. Parties 1 et 2. 8vo. Paris, 1902.

The Story of the Stewarts. ANON. Edinburgh, 1901.

With Steyn and De Wet. By Philip PIENAAR. 8vo. 3s. 6d. London, 1902.

Magenta—Der Feldzug von 1859. By Lieutenant-General VON CÄMMEBER. 8vo. Berlin, 1902.

Horses on board Ship. By Captain M. H. HAYES. 8vo. 8s. 6d. London, 1902.

Social and Imperial Life of Great Britain. By D. KENELM COTES. Vol. I. 8vo. London, 1900.

Amtliche Liste der Schiffe der Deutschen Kriegs und Handels-Marine mit ihren Unterscheidungs-Signalen als Anhang zum internationalen Signalbuche. Herausgegeben in Reichsamt des Innern. 8vo. Berlin, 1901.

L'Etat Militaire des Principales Puissances Étrangères en 1902. By J. LAUTH. 8vo. Paris, 1902.

Le Marin Militaire de la France sous le Règne de Louis XV. Par G. LACOUR-GAZET. 8vo. Paris, 1902.

Meine Erlebnisse und Erfahrungen im Boerenkriege. By ADALBERT GRAF STERNBERG. 8vo. Berlin, 1901.

Les Corps Francs dans la Guerre Moderne. By Capitaine V. CHARETON. 8vo. Paris, n. d.

Die Schlacht von Marengo und der Italienische Feldzug des Jahres 1800. By HERMANN HÜFFER. 8vo. Leipzig, 1900.

Die prinzipiellen Eigenschaften der automatischen Feuerwaffen. By KAISERTREU. 8vo. Vienna, 1902.

The New South Wales Lancer Regiment and First Australian Horse. By FRANK WILKINSON. 8vo. Sydney, 1901.

Naval Brigades in the South African War, 1899-1900. Edited by Surgeon T. T. JEANS, R.N. 8vo. 6s. Lond., 1901.

Journal of the Iron and Steel Institute. Vol. LX. Edited by BENNET H. BROUH. 8vo. London, 1902.

With the Royal Tour. By E. F. KNIGHT. 8vo. Lond., 1902.

Studien zur Kriegsgeschichte und Taktik Heeresbewegungen im Kriege 1870-71. Band I. With Maps. Herausgegeben vom Grossen Generalstabe. 8vo. Berlin, 1901.

Militär-Lexikon : Handwörterbuch der Militär-wissenschaftlichen. Large Royal 8vo. Berlin, 1901.

A Militia Unit in the Field - Being a brief account of the doings of the 6th Bn. Lancashire Fusiliers in the South African War during the Years 1900 and 1901. ANON. 8vo. London, 1902.



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POSTPONEMENT OF LECTURES.

The Lecture by Sir J. R. Colomb, K.C.M.G., on "The Garrisoning of our Coaling Stations." has been postponed to Thursday, April 10th, 3 p.m.

The Lecture by Mr. A. Colquhoun on "Colonisation and Sea Power" has also been unavoidably postponed.

ERRATA.

January Journal, Page 104, Lines 18, 20, and 21, for 6 in.
guns read 8 in.

February Journal, Page 231, Line 6, for "Anson" read
"Osborne."

Do., Page 275, Line 19, for "Patent" read "Talent."